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NEW AND OLD PRODUCTS IN ZANZIBAR.

(From Annual Report of the Agricultural Department of Zanzibar.)

COCOA.—We have rised a quantity of young seedlings in the nursery, chiefly from seed obtained from Mr. H. Baty, Seychelles, in June. The seed arrived in capital condition, was at once germinates between blankets and planted in bamboo pots. Some of the plants have been transplanted out with scarcely one failure as the roots suffered no disturbance during the process, and with cacao this is most important. The Plantation which we set out in the beginning of the year from last year's seed suffered severely from the want of rain. Still many trees survived, while the gaps have been supplied. We have enough plants to bring up the total acreage under cacao to about 8 acres. The trees are being placed 14 feet apart. We have planted intermediate rows of bananas for temporary shade and we find these better than castor oil trees. The latter bear a scanty crop of leaves in the dry weather and have a straggly, unsightly growth. For permanent shade we have planted bois immortelle but these have also suffered. We are also trying *Melia azedarach* for permanent shade which promises well; it has a healthy and rapid growth when young. There are I think several species of trees on the island suitable for shade as for instauce *Erythrina tomentoso* a leguminous trees which sheds its seeds freely, and a species of *Dalbergia* also freely seeding and growing rapidly. We have as yet not proceeded far enough with the cultivation of cacao to form an opinion as to its suitability for this country. It evidently requires very careful attention when young and the trees cannot be set out and left to their own resources like for instance cloves or coconuts or even coffee. The tow cacao trees on Miss. Thackeray's shamba at Mbweni cropped abundantly last year, but this year the fruit shrivelled up when about the size of an areca-nut and one of the trees is now nearly dead.

Kola.—A small plantation of about 3 acres of Kola was, in March, laid out in the clearing near the police station. They survived the transplanting and the drought much better than the cacao, though they have grown very slowly. Some fresh seed planted in August and put out the October to supply the gaps has overtaken the old planting. Kolo, though it springs up rapidly in the nurseries, is evidently of slow growth. We placed them 20 feet apart shading them in the same way as the cacao. Kolas are subject to great vicissitudes in the London market, the price ranging from 2d to 6d or even 10d per lb. They readily fetch a high price if in small supply but fall to nothing if over produced. A good deal depends upon the condition in which they reach the market.

Coffee.—The few Arabian coffee trees which were put out last season have grown excellently and will be ready for toping in another year. Some more seed has applied for from Nyassaland. Young plants of Liberian are now coming in the nursery for a plantation of 4½ acres to be laid out this season.

Tea.—We have decided to give this product a trial because of the healthy appearance of the tea bushes at Miss. Thakeray's shamba, Mbweni, planted by Sir John Kirk. These were pruned down in October and flushed well, bearing enough new growth in two months to form a plucking surface and leaves six inches, of pruning wood. Half a maund of Horagalla, Ceylon Assam Hybrid has been obtained and planted in the new nursery at Mpapa and is growing well. This should give us enough plants for 6 acres, planting 5 by 5, and leave a margin for supplies and distribution.

I don't think that Zanzibar will ever enter the lists as a tea producing country, even if low country varieties are found to flourish here, as the labour supply is too small and uncertain. The plentiful

supply of organised labour in Ceylon is one of the chief reasons why that country has taken the lead in this industry, while Natal is an example where the comparatively adverse conditions of labour have operated unfavourably. In our present unstable condition of labour we could not do more than grow a few acres for local consumption and perhaps induce the Arabs and natives to cultivate a few trees for their own use. Another point to remember is that tea is a declining market and is probably already over produced.

Pepper.—The pepper vines at Mwera, planted some years ago by Mr. Bomanji, have seeded this year though not freely. The condition of these plants shows, I think that pepper, if properly cultivated would grow here. Still we do not propose to give this product any special attention at present. Pepper is cultivated largely in India. The Straits Settlements and Borneo where the plantations are well established, and though the market price of pepper ruled higher this year than last, it is subject to the caprices of speculation as all spices are when the supply fluctuates. Its cultivation is confined to the East Indies and thought this in itself is no reason why it should not be tried elsewhere it is a noteworthy fact that the West Indies have not found it worth their while to take it up. Unlike cloves and coconuts its cultivation requires detailed attention and if introduced here would be more suitable for wa-ha-dimu small cultivators than for Arab planters. In the East Indies the Chinese are the principal pepper-growers.

Vanilla.—The small plantation of vanilla at Dunga has survived the dry weather and is doing well. The trees lost their leaves and the plants had to be artificially shaded but beyond this the plantation has absorbed little labour. Once establised vanilla looks after itself fairly well but it must be sheltered from the sun and, in the dry weather, watered twice a week. Further supplies of cuttings have been ordered and I hope to receive them in time or planting in the rainy season. The live support —castor oil (Mbono) and Frangipani—have already been laid out and are ready for their reception, and we propose to plant some in a patch of natnral forest growing on this estate. The vanilla at Mwera planted by Mr. Bomanji, flowered this year and a small quantity of fruit is now growing from flowers that were fertilised. Some of this fruit is 7 and 8 inches long. The length of bean that reaches the market from Seychelles, Mauritius and Bourbon varies from 5½ to 8 inches; our beans are therefore well up to the average length. There is an other patch of fruiting vanilla higher up the Mwera valley on a plantation owned by Jack Savey, an old skip's Krooman. Arabs take more interest in vanilla than in any other new product, though there are, as yet, no indications that they means seriously to take it up. The wild vanilla, which was described in the *Shamba* of August and November, deserves a passing notice from the fact that it is bearing fruit. In October Mr. Robertson and I visited a patch growing on the coral about a mile from the Dunga bungalow and found a quantity of fruit forming. One pod measured 5 inches in length. Some insect must have been at work fertilizing the flowers of which there were at that time, numbers, though no insects, excepting ants, were visible in the dense, stiffing jungle.

Para Rubber (Hevea Braziliensis).—The plantation of Para rubber made at Tundaua, Pemba, last year has suffered severely from the drought and only a few trees are now left. These however have grown well and were over 6 feet high in October. A young plantation, of a little over 2½ acres, has been laid ont at Dunga in valley to the east of the house and we have a further supply of seedlings in the nursery for another ½ acre. All are doing well. The two-year-old trees at Dunga, of which there are about a dozen have, grown slowly. In July I tapped the large Para rubber tree growing in Miss Thackery's garden at Mbweni, and planted by Sir John Kirk. This tree is probaly 20 years old. It was flowering in January of this year (1899). We cut V shaped conduits on three sides of the trunk to a height of about 6 feet from the ground but no juice was obtained; the tree seemed completely lacking in latex. After operating for about an hour we obtained enough milk to work up into a piece of rubber the size of a pea. I visited the tree a few days afterwards but there were no signs of further exhudations. On previous occasions when I had pierced the tree with a penknife milk had flowed freely. I think, therefore, that the bad results obtained at the tapping must be due to the dry weather and the soil, which, in the locality, is dry and sandy. The result is nevertheless, disappointing, as a tree of this size should yield an appreciable quantity of rubber at any time.

Ceara rubber (manihot Glaziovii).—One thousand of these trees were planted out on the Wanda in April. The soil here is only a few inches deep but is of a rich vegetable mould. It overlies coral mixed with red sandy soil. Holes 18 inches deep were sunk through this and filled in with surface mould. The trees did well at first but the subsequently dry weather killed off all but 192. We shall replant this clearing in the rainy season, sowing the seeds in the holes which are already dug.

Central American Rubber (Castilloa elastica).—200 seeds of this variety of rubber were received in September, 92 of which grew. Some of these have been planted out in the same valley as the Para and at the same distance apart from one another, namely 17 feet. All are doing well, with the exception or a few that were attacked by mongoose. These annimals also destroyed some of the young Para and coccoa plants. We were compelled to put a fence of small stakes around each tree to prevent their attack, which takes the form of biting through the young stem an inch above the ground. With the exception of Para rubber the cultivation of Centeral America Rubber is receiving more attention in the tropical world than that of any other variety of rubber plants. The trees are described as tall and handsome, with large spreading foliage and deep roots and have been recomended as shade trees for cacao and coffee. The trees yield rubber in 8 or 10 years and are said to thrive equally well in a dry or a wet climate. *Castilloa elastica* is of the same natural order as our Jack fruit tree. In its native country, it is undergoing rapid extermination by the native rubber collectors.

Assam Rubber (Ficus elastica).—Several of these trees are growing about the island; we have one at Dunga. *Ficus elastica* is the "rubber plant" common in conservatories at home. It is fonnd in the rainy mountain regions of Assam and is said not to thrive in low conntries. Probably therefore, it would not as a rubber producer, suit our climate.

General remarks on Rubber.—We have now five different species of rubber producing plants on the island, including the native vine *Landolphia Kirki*—Seeds of Lagos rubber, *Kickxia African* have been applied for. The unfavourable results obtained from tapping the Para rubber tree, and, similary, from tapping the Ceara trees last year, of which there are numbers at Mbweni, make it I think doubtful whether rubber can be successfully grown here. Much of the cultivable areas of this island are of the same nature as the Mbweni land, namely dry and sandy, and is adapted for the cultivation of coconuts than of India rubber. The low valleys and swamp are, in extent proportionally small, and are utilised by the natives for growing rice. Allowance must be made for the dryness of the season, though at best the rainfall is but light. I think that the results in Pemba are much more favourable notwithstanding the high percentage of deaths, though of course we have had as yet no trees there large enough to tap. The two-year-old Para trees at Tundaua have far outstripped our two-years old trees at Dunga, though they have had the same dry weather to contend with. Both the soil and configuration of the land is more suitable in Pemba for the cultivation of rubber than in

Zanzibar. The soil in Pemba has a greater admixture of clay and therefore greater drought resisting properties than the soil in this island, while the low steamy valleys are numerous; the country being in fact one continuation of small hills and valleys.

If Ceara Rubber could be established on the coral it would indeed be a great gain. It is a tree that, in the opinion of some authorities, might be profitably grown in land corresponding to our coral country. After the holes are dug and the seeds planted the expenses are confined to keeping fires off, which involves judicious burning on the boundary of the plantation about twice a year.

The planting of the Landolphia Vioe is not practicable except in the natural forests, where it is a matter of preservation rather than of propagation. And it is far more important to preserve the forest trees themselves than the rubber vines, though the destruction of the latter naturally follows upon that of the former. But a forest could be stocked with rubber vines in a much shorter space of time than that required for rearing the trees to afford the necessary support and shade. The latter in fact would be an impracticable undertaking. The rubber forests of Pemba are so thickly festooned with creepers that it is almost impossible to penetrate them, but only a small portion of these are rubber yielding vines, and they are so widely scattered that the collection of rubber scarcely pays. The whole aspect of the forest would be changed in a few years by cutting away the superfluous creepers and planting young Landolphia plants in their places.

China Grass (Bœhmeria nivea.).—A small experimental plot of this fibrous plant has been grown in the nursery. Through the long drought it received no water yet it has preserved a fresh green appearance and in 12 months has grown about 5½ feet. But no cuttings have been made as the stems have not yet ripened. A small quantity of roots of the tropical species *B. tenacissima*, Ramie or Rhea fibre have been applied for.

The following are approximately the areas to which the principal new plantation will be brought up in the coming planting season. In the case of Tea and Liberian coffee no trees have as yet been planted out:—

Cocoa	8	Acres
Ko'a	3	,,
Liberian Coffee	4½	,,
Tea	6	,,
Para rubber	3	,,
Castilloa rubber	½	,,
Ceara rubber	1,000 trees	
Vanilla	uncertain	
Coconuts	About 3,000 young plants, half of which will be ready in April. At Machui about 3,000 plants will be ready in April and another 2 or 3,000 in November.	

II.—CLOVES.

Marseilles Shamba.—In addition to the Dunga plantation which this year came under our management we have had charge of two of H. H. the Sultan's shambas at Machui—Marseilles and Kitumba. The former is situated on the second range of hills which runs longitudinally through the island. The soil is a brick red mixture of sand and clay which gets very hard in dry weather. It is however superior in quality to the corresponding outcrop on the Masingini range of hills to the westward. Kitumba is in the low alluvial district of that name which spreads out to the eastward of the Machui range. The soil is generally a red loam overlying clay. As these two shambas adjoin and were as far as possible worked together they may be counted as one.

Marseilles plantation has a historic interest worthy of note. It belonged to Khalid, third son of Seyyid Said, first Sultan of Zanzibar. Khalid affected the French and so named his estate after the Mediterranean seaport town. Another account says that a Frenchman who visited the shamba was so struck with its rich and excellent appearance that he named it Marseilles. On Khalid's death it passed to two of his sisters. The place in those days was richly decorated according to the prevailing taste of Arabs and was frequently visited by members of the Sultan's household. When Seyyid Said died Majid, as eldest son in Zanzibar, ascended the throne, but his ambitious brother Barghash, fifth son and afterwards Sultan, conspired from the first to bring about his brother's destruction. In 1868, two years before his death, Seyyid Majid confined Barghash to his house which he surrounded with troops, but Barghash, by the help of his sisters, escaped in the guise of woman's clothes and collected his forces at Marseilles. Here he was followed and routed by the Sultan's troops who bombarded the palace and reduced it to a ruin. The final engagement was fought out in the open country in the western side of the hill, just beyond the palace, Barghash being compelled to fly back again to the town.

Cost of Clove-picking.—Clove picking began, in Zanzibar in the latter end of October. At Machui we departed from the usual method of picking and instituted a system of payment whereby we could ascertain the total cost of clove gathering. The shamba people who, according to the new *sheria*, should have given their labour four days in the week were paid for each operation. Under these circumstances picking proceeded from the first more briskly with us than with our neighbours and we were able to gather a much larger proportion of cloves. The men and women of the shamba were rated as follows:—

1 Nkoa or headman	27	pice for every 400 pishi brought in
2 Wakadammu or headmen 23 pice each	46	,, ,, ,, ,,
1 Storekeeper and caretaker	20	,, ,, ,, ,,
1 Woman cleaning sweepings	15	,, ,, ,, ,
Total	108	pice per 400 green pishi

Pickers 3 pice per pishi, and 3 pice per day (that is one pishi gratis) for spreading out and taking in the cloves in the morning and evening and in showery weather.

Wa-geni pickers, or outsiders, 3 pice per pishi. The number of wa-geni pickers varied from 60 to 100 a day early in the season, dropping to 40 as gatering became general. The cloves were conveyed to the Custom house for sale on donkeys at the rate of 24 pice per bag of 20 dry pishi, equal to 40 green pishi.

The total cost of gathering, not including the overseer's wages, may, therefore, be calculated as follows:—

Per 400 green pishi:—

Nkoa etc.	108
Picking at 3 pice per pishi ...	1200
25 spreaders daily at 3 pice each; reckouing an average of 400 pishi picked per diem	75
Transport (10 bags)...	240
Total pice ...	1623

1623 pice at 68 pice per rupee, the local rate of exchange, are equal to Rupees 23 pice 59.

Reckooing now that 20 green pishi will when dry weigh one frasla we have:—

Total cost of gathering and conveying to market:.. R. 23 p. 59 per 20 frasla (400 green pishis) or R. 1 pice 13 per frasla.

Quantity picked per day.—"Picking" includes the actual gathering and subsequent stalking. Pickers stop gathering at 2 o'clock and bring their loads in to stalk, after which the cloves are measured, stalks not being counted. Stalking and measuring will sometimes go on up to half-past six. The average quantity picked (and stalked) at Machui in a day was about 6 pishi per head. Our best picker was a woman named Binti Kiweti who gathered 9 and 10 pishi regularly, though she lost from an hour and and half each day in taking the cloves in an out. Our heaviest day was November 24th when we picked 874 pishi with

135 men: an average of 6·4 pishi per head. At Dunga our average was much less by reason of their being fewer cloves; besides having to visit more trees the people never became so expert. Our best picker brought 6 and 7 pishi, while our average was between 3 and 4 pishi per diem.

(To be continued.)

THE "CAUCHO" RUBBER OF PERU.

A published report from H. M. Consul at Parà states that the tree which produces the quality of india-rubber exported from Peru, through Parà, under the name of *caucho*, has recently been determined by M. Huber, a botanist, who is on the scientific staff of the Museum of Parà.

M. Huber lately visited the Ucayli region in Peru, and discovered that the tree was a *castilloa*, and will shortly be able to decide by comparison whether it is the same as the *castilloa elastica* of Central America, or a variety of the same genus.

It has been surmised previously that the tree might be a *castilloa*, but it is said that M. Huber is the first authority who has settled the point. With this knowledge it results that the distribution of the *castilloa* is winder than was previously thought to be the case.

Caucho is produced in the neighbourhood of the Bolivian tributaries of the river Amazon, and from parts near the said tributaries that pass through Brazilian territory.

A sample of *caucho* exists in the Parà Museum that came from the banks of the River Tocantins. It is said that *caucho* is also produced near Macapo and Mazagao, on the north bank of the River Amazon, near its estuary.

A recent statistical return on the exports of the State of Parà shows that this produce was exported in small quantities (altogether about 10 tons) from Aveiros (River Tapajos), Santarcm, Alemquer and Obidos, on the River Amazon.

The total shipments of *caucho* from Amazonian ports amount to about 2,000 tons annually. M. Huber describes the process of tapping as follows:—

The trunk is almost severed in two at a distance of about 3 feet from the ground, and the tree is allowed to fall in such a manner that it is supported in an inclined position by its branches, and still holds on the part that remains standing. The sap is collected and poured into a hole made in the ground, and is coagulated by means of the juice of certain local *lianas*. The natives state that this is the best method of tapping, and that if the trees were treated in the same manner as the *heveas* they would soon be destroyed by insects, which would attack them where the bark would be injured by incision. This may be only an excuse for unnecessary destruction, which might be avoided. However, it must be considered that as these trees grow far apart from each other in their native state it must be inconvenient, if not impossible, to attend to more than one tree at a time.

Trees that have been tapped in the manner described do not survive the operation. In the course of time their places are no doubt taken by young trees that grow from seeds. The amazonian *castilloas* are found on elevated land which is beyond the reach of floods, whereas the *heveas* thrive best in the lowlands that are periodically inundated by the River Amazon.

Sir W. T. Thistleton Dyer, Director of Kew Gardens, in a communication to the Foreign Office, states that *caucho*, of which caouthouc is probably an expanded form, has been hitherto identified with "India-rubber" par excellence, the produce of one or more species of *hevea* indigenous to the basin of the Amazons and exported from Parà; it would now, however, appear that the *caucho* tree of Peru is a *castilloa*. One or more species of this genous produces the India-rubber of Central America. In South America the *castilloa* has been known to extent as far as Ecuador, where it is called *jebe*, otherwise *jeve* or *heve*. According to Aublet, this latter name was given in Northen Ecuador to a species of *hevea*, and in founding that genous he derived its name accordingly. In the Amazon basin the name for the species of *hevea* is "Seringa," and in Central America for those of *castilloa* "Ule" or "Tuun" (see *Kew Bulletin*, 1898, pp. 141, 142.) Perhaps in Western South America the names *caucho* and *jebe* are applied indiscrimi ately to rubber-producing trees.

According to a report by Mr. D. B. Adamson, H. M. Consul at Iquitos, dated 24th December, 1898, and published in the "Transactions" of the Liverpool Geographical Society for the same year, Peru has two kinds of rubber producing trees—*caucho*, which appears to belong to *castilloa*, and *jebe* to *hevea* (pp 39 40). Both Mr. Adamson and Mr. Churchhill also state that the rubber is extracted from the *caucho* tree by felling.

The *jebe* is always tapped. The former process results in a district being "worked out." In consequence, according to Mr. Adamson, "many of the 'caucheros' (or rubber collectors) are working on Brazilian rivers, where the supply is yet more plentiful." It is not, however, necessary to fell the *castilloa* trees to collect the rubber.—*British Central Africa Gazette.*

NOTES ON THE "SPOTTED COFFEE-BUG" AND KINDRED QUESTIONS.

BY J. MAHON.

When the particulars of Mr. Cameron's discovery were forwarded to me for examination and report it was suggested that I should write something on the subject as soon as the facts were made public property. There are a few points, perhaps, that may be briefly touched upon to some purpose.

With the descriptions and mode of life of the insect as set forth in the pamphlet just published I find no grounds for differing, and it does not seem necessary to repeat them here. When my attention was directed to the matter our dry season was too far advanced for any very critical observations, as undoubtedly the insects' chief depredations are committed while the coffee berries are young and growing. Careful search in a couple of plantations where "spotted" and "light" bean are common failed to reveal the insect, and but little success attended a considerable hunt amongst the flowers and fruits of many native plants. This was during the latter half of July.

In Mr. Cameron's company I subsequently saw the creature at work in his gardens wherever green berries were common. That the numbers seen were not great was due, doubtless, to the vigorous measures he was taking for their destruction. I observed the insect a day or so later in greater force on the neighbouring Magomero Estate but I did not find it on other Namasi plantations.

At Zomba, early in August, I met with another phase of the creature's mischievous habits, which, although it did not surprise me when I found it, is not mentioned by Mr. Cameron. Examining some beds of seedling *Coffee Arabica* (unshaded) which we raised recently I noticed the terminals and young "primaries" of many drooping, whilst some were killed. Presently I came on a few of the bugs sucking these parts in other seedlings proving them to be the cause. At the same time I took a relative of theirs, as large as a *longicorn* beetle and of a dull brownish colour, who was occupied in the same destructive work. He prefers to conduct operations head downwards always and resembles a fragment of dead branch or leaf at the first glance. This indicates that the planter's vigilance must not only be exercised over plant in bearing but actually from the time his coffee germinates. My observations lead me to the same conclusions as Mr. Cameron regarding the "spotted bug" and its congeners being the principal cause of "spotted bean" and, to a certain extent, of "empty" or "light" berry also. Concerning the latter, however, I find so much of it

with practically no traces of external attack that I am compelled to repeat the opinion hitherto expressed, namely, that "empty berry" is due to debility and want of stamina generally in the plant. But that "spotted bean" is largely due to the cause mentioned above I have no doubt.

As a matter of fact the *haustellate* group of *Hemipterous* insects are very numerous in the country, as they are in countries possessing similar climatic conditions, and it is necessary to wage incessant war on all of them. The sub-order *Hemiptera* of the class insecta contains, perhaps, the greatest pests that man and other animals, as well as the vegetable world suffer from, and this *haustellate* (i. e. provided with a *haustellum* or sucker) group are the worst of an extremely bad lot. The illustration of the ravages members of this group can effect in the case of a considerable indigenous forest tree (*Bersama*, native name "Sekese.") is instructive. Anyone who has collected seeds of our native plants must have been struck with the very small percentage of good material obtainable. This is true in almost every instance. Naturally, in the case of coffee we spread a plentiful table for the "spotted bug" and its relatives, just as we harbor and foster boring beetles (and the growth of fungi) by neglecting to burn or remove every particle of dead wood in a garden. For it is a rule that insects prefer to live in close proximity to the feeding material they find most suitable. It is also true that soil constitutionally poor, or impoverished by faulty cultivation, and where growth is stunted, are natural breeding grounds for insects.

The fact so frequently observed that young, or virgin, coffee crops are practically immune from "spotted bean" coincides exactly with what entomologists point out, namely, that injurious insects select sickly stunted, or weakly plants for their attack; while the preference "spotted bug" shows for green berries is characteristic of the group which lives on green food and whose ravenous propensities are notorious. we see this in the well-known genus *Thrips*. Planters will recollect how these latter quite defoliated coffee gardens in several districts during the last months of 1897.

Professor Alphens Packard points out that injurious insects become suddenly abundant in newly cultivated tracts where the former presence of forest, and their natural enemies, kept them under. The balance of nature appears to be disturbed and insects, multiplying rapidly, become terrible pests. In the course of time, however, they seem to decrease in numbers and the former balance is restored.

He also remarks that insects often have a metropolis where they occur in great abundance, and judging from the numbers of "spotted bug" collected by Mr. Cameron this year, his plantation would seem to be in or near a metropolitan area.

Concerning remedies for the destruction of this pest I do not consider any means more satisfactory than their collection by children, as, fortunately, the creature is extremely easy to catch, and so are other members of the group that came under observation. It would be interesting to experiment with the locust serum or which might prove effective. I feel certain, however, hand picking, with the aid of their natural enemies, will suppress them, for we have many of their inveterate enemies, (the lady birds) here. I have seen and examined the latter myself, while various genera and species are named in the lists given in Johnston's "British Central Africa."

That Mr. Cameron should have noticed the "spotted bug" so far back as ten years ago at Mandala and suspect its evil-doing then is a matter of interest, and while it is to be regretted the facts were not brought to light earlier, yet this is an instance where the adage "better late than never" is happily *apropos*. Personally my attention never was drawn to the matter during my visits to coffee estates and although I learned recently the late Mr. Buchanan wrote about the creature in the "C. A. Planter" of his day, yet that was some time prior to my arrival in the Protectorate and the question, if ever it excited any local interest, had evidently ceased to be remembered. To Mr. Cameron, therefore, all the more credit is due for so effectively resusciating it.

Seed Selection. I am absolutely convinced the subject of seed-selection for furnishing new coffee gardens does not receive with us anything like the attention it deserves. Situated as the coffee industry is in this country it behoves planters to use every endeavor to ensure a high class seed being obtained for sowing. In consequence of the danger attending the importation of fresh seed and the resultant inbreeding that must ensue, it is essentially necessary that seeds used for sowing be taken from especially selected trees. To gather a coffee crop, pulp it, and afterwards take at hazard a quantity of the beans for sowing, is assuredly the worst methods that cultivators can adopt, for it does not at all follow that the largest beans will eventually furnish trees capable of yielding good crops of good quality.

The planter must select from his trees at bearing time those possessing as many desirable qualities as he can obtain, then mark the trees and see that their fruit is only picked when perfect ripeness is attain and that the seeds are expressed with the fingers and not fermented, but sun dried. I have no doubt whatever that the numerous blanks and failures one meets with in every fruiting garden during May, June, and July, (and a large percentage of the "empty" berry) are due to inherent debility transmitted through a weak parent tree, for when the strain of bearing is placed on such plants they collapse. Most people are aware of the trouble and expense incurred by agriculturists at home in keeping animal and vegetable stock pure and strong, obviously we must employ similar measures in our cultures here. Reference has just been made to the tendency insect enemies have for attacking weakly or stunted plants and it follows that a vigorous plant will tide successfully over the possible unfavourable climatic periods (drought &c.) that may occur here when the weaklings will be found to succumb. In this connexion the value of new blood suggests itself.—*British Central Africa Gazette.*

AGRICULTURE IN MEXICO.

In Mexico irrigation is necessary in the greater portion of the country, and on account of the scarcity of water, a large extent of land cannot be utilised. When the owner of land has sufficient water for the purpose indicated, he retains his property, and rarely can be induced to sell, as it is of permanent value to him. For the last three hundred years large tracts of land have been owned by individuals or families, who have spent heavy sums of money for canals and dams in order to make them productive. The United States Consul-General at Monterey says that on account of this, and the attending expenses of irrigaton, there are fewer small farmers in Mexico than there are in the Uited States. Until recently farming in Mexico has been of the primitive order, but the Mexican is an expert in irrigation, and if he can get the water, his land becomes fertile and yields generously. During the last two decades decided improvements have been accomplished through the introduction of modern improvements into farming in Mexico. The increase in production corresponds to the improvements in farming apparatus. The great railroads of the country have been important factors in this advance, enabling farmers with a surplus of production to supply those less fortunate. The cost of labour is from 6d. to 1s. per day depending on the locality. There are two crops of corn a season upon which the former averages about £5 per acre gross. Sugar cane, turned into *Piloncillo* or brown sugar, averages from £14 to £19 per acre gross; beans from £6 to £8 per acre; rice, from £7 to £9 per acre; all other products realising correspondingly high prices. Thus it will be seen that the profits of the farmer must be large. Hay is not made in any great quantity, but corn fodder is sold to advantage. Near the cities, a lucrative trade is carried on in

green barley and corn, which are cut before maturity and delivered in the cities to owners of horses and cows. Cattle breeding is, and always has been, a profitable business in Mexico, consequent upon cheap labour, low taxes, and the large tracts of cheap land which are suitahle for grazing only. Until recently, no attempt has been made to improve the stock, hut certain large cattle men have now undertaken to do this, and steady imnrovement is certain henceforth. The demand created during the late war with Spain, and the high prices which ohtained in the United States, increased the price of cattle to such an extent that the northern portion of the country has become depopulated of its stock, which, ft is said, will take several years to replenish. Dairy iarming in the neighbourhood of large cities is lucrative, milk selling at 1s. per gallon, and butter at 1s. 6d. to 2s. per pound. Those engaged in this business make money rapidly. Fruit and vegetable farming are heginning to attract attention. Formerly this amounted tc simply enough for the home market. Now an effort is to be made to supply the United States with early fruit and vegetables. The movement is in its infancy, but it is expected to grow into large propotions. Oranges, lemons tomatoes, beans, &c., are produced in Mexico from four to eight weeks earlier than in the United States. Hence this is expected to he a profitable business in the near future. Wheat is cultivated in the high tablelands of Central Mexico, and is fairly profitable. It is not the equal of that grown in the United States, either in quantity per acre, or quality. Para and Bermuda grass give pssturage in many sections of the country. They are said to be equal to any in the world. Parts of the country are adapted to the growth of tropical products, viz., coffee, vanills, rubber, coconut, cocoa, &c., the quality of all heing excellent. It is said that the best vanilla of the world comes from the State of Vera Cruz, and the best cocoa from the State of Chiapas. The coffee of Michoacan is said to be equal to any; the tobacco of Vera Cruz is preterred by many to that of Havana, and the sugar production of Southern Tamanlipas, or Northern Vera wruz, is said to be surpassed by that of no country save Hawaii in quantity, and it is more profitable to the producers, for the reason that seven to ten crops are the result of one planting, whereas the Hawaiian planters get only two. Taken as a whole, farming in Mexico is an inviting field for persons of capital and intelligence.—*Journal of the Society of Arts.*

STORY OF A CLOVE PLANTATION.

The experiences of the Rev. Canon John Key of the Universities' Mission to Central Africa are worth recording as they throw light upon that rather obscure question—Clove planting. There are little or no data to enable one to figure out the approximate returns to be expected in this industry; no one can say whether clove growing pays or not; the general impression is that it does not pay and the impecunious state to which many Arab planters have heen reduced confirms that impression. Nevertheless we believe it to he a false one, based upon wrong date, or rather upon complications and no data at all. This story of Canon Key's, therefore, being record of actual facts, not calculations from data merely, is valuable accordingly, even when due allowance has been made for the wealth of last year's crop.

The shamba in question is known as Kizimbani about half an hour inland from Weti, Pemba. It was selected by Canon Key as a missionary site chiefly because of its sitnation on the Suka Road, one of the arteries which feed Weti from the north. Kizimhani contains in all 1,100 clove trees 950 of which are bearing, the other 150 heing unproductive. R1,132-8 0 were paid for the clove shamba originally two and R155 for three patches of waste land adjoining; in all R1,287-8 0. Occupation was entered into in January 1898 and clove picking began on October 29th lasting until February 21st 1899, 3 pice a pishi were given to pickers, the legal measure begin used. Arabs in the locality also gave 3 pice per pishi but used the native wooden messure, always nsed iu the plantations for clove picking both in Zanzibar and Pemba and which contains a little more than the metal one used by the shop-keepers. Canon Key gave his people 2 pice per pishi daily and banked the other pice for them till the season was finished, an arrangement which they apparently appreciated. From 20 to 40 pickers were employed and two overseers at R14 a month each.

In all 520 fraslas were ohtsined from the 950 trees an average of 19 2-5 lb. of cloves per tree and a retnrn after paying export duty of 25 per cent. of R1,965. Add. R38 for 43 fraslas stems and the gross rernrns are R,2003.

From this total there are seversl charges to be deducted. Eight pice per bag for cloves snd five pice for stems, amounting to R29, were paid for conveyance to the beach on donkeys and R76-0-0 for freight to Zanzihar, landing charges, sorting charges, import declaration and scale fees:—

520 fraslas Cloves	..	..	1,965
43 „ Stems	..	..	38
			Total..2,003
2 Overseers 4 months	..	..	112
Picking 528 fras. ..	..	..	466
Conveyance to beach	..	..	25
Freight etc. ..	..	..	76
Balance profit ...	...	..	1324
			Total..R2,003

Balance profit..1,324

Thus the purchase money of the shsmbs, R1,287 was more than recovered the first year. After paying for digging the shamba (R100), haskets, bags drying mats, bakshish to overseers etc. the year's profit was reduced to about R1,000. The former owner used to make R200 to R400 a year out of this shamba and Arabs now attribute these good resnlt to "the blessing of God" though the Canon, thinks that they may be accounted for largely by the fact of his having dng the shamba over.

It would he misleading to generalize from these results because doubtless Canon Key had much in his favour; proximity to a large village and a comparatively plentiful snpply of labour; a good shamha and a prolific season. The record is that of a prosperous year and stands as such for what it is worth. Still in our opinion it is worth much. The bad years that now and then occur in clove plautations, and which have contributed to their disparagement, may be accounted for by the habit of the clove tree and vicissitudes of seasons but they may be also due to improper cultivation or at sny rate partly so. If clove trees will yield so roundly after years of casual mansgement and two years of extreme drought what may not he expected from them if properly cared for?

An interesting comparison may he drawn from the results at Kizimbani and those at Machui as published by the report of the Agricultural Department for last year:—

	Kizimbani	Machui
1. Yie'd per tree lh...	19 2 5	6½
2 Cost of picking and delivering per frasla ..	R1-4 3-10	R1-5½
3. Return per fras. net	R2-7	R3-4
4. Return per tree net	R1-5 3-5	R0 9¼
5. Approximate price obtained per fras. ..	R4-15 1-5	R6-3 9-10

(Less duty and disregarding stems)

The comparison is on the whole distinctly in favour of Kizimhani even when allowance is made for the fact that at Machui a quarter of the crop was ahandoned for want of labour. The large quantity of cloves to handle at Machui made it necessary to employ a staff of spreaders while at Kizimbani this work was done by the pickers at no extra cost. In calculating the yield and return per tree the good

and bad trees are all counted together at Machui but at Kizimbani the unproductive trees have been neglected.

Still when all these deductions have been allowed for, the superiority of the Pemba trees remains very evident. They date from prehurricane days and are therefore older and larger, and the soil at Weti is stronger, than at Machni.

Canon Key concludes his report by some very interesting remarks which we append :—*Clove culture.*—The Arabs plants 6 or 7 trees together; the e often unite in a wanderful way and from one tree but knowing that several trees were planted together you can see how and where they join and the numerous branches, each "tree" having the same number as a single tree would have. In a shamba of young cloves that I bought I rooted out all except one with the result that the young trees have gained in strength.

Pruning.—I have found that many trees have overgrown their strength, hence reducing their branches has added strength to the rest of the tree. We made a mistake in the first instance in cutting away the middle branches which of course cannot bear many cloves, but this divided the tree making it difficult to climb. Lateral branches are wanted in clove trees; the upward growing branches should be cut off otherwise the tree in time will grow to wood and only bear on the sides and the top.

My own shamba I cleaned once before last clove season. Leaves and grass were dug in for manure and the rain was able to soak into the ground instead of running off the top. Nothing flourishes under cloves as the small roots spread out like a net on the top of the soil; the trees would probably be the better for their being cut. The shamba next to mine I foolishly offered to pick but the cloves were small and many dropped off before becoming mature, which made difficult work for the pickers. We made R100 but lost more by being compelled to neglect our own shamba. Clove trees seem to die in some parts of the shamba from some cause I do not know. I have noticed that trees on the outside of a plantation suffer most [May not this be due to the outside trees receiving the brunt of the sun's rays while the inside trees shade one another? Ed.] Many too have died in the valley from want of drainage. But most trees have recovered in a wanderful way. Arabs talk of the crop this year as half of that of last but I hope to make two thirds as our shamba is doing well."—*Shamba.*

CHILEAN AGRICULTURE.

About three-fourths of the persons engaged in agriculture in Chile use machinery and ploughs of European or American manufacture, the remainder using the same style of implements that were in vogne in Egypt 2,000 years ago. A pointed stick of hard wood with a single shaf stuck in the centre serves as a plougb. For harrowing, a heavy beam of hard wood, with the additional weight of the ploughman standing on it, is dragged by a yoke of oxen over the rough-ploughed farms. The reaping, according to the United States Consul at Valparaiso, is done by hand, the threshing, by forming a deep circle in the open air with straw, similar to the ring of a circus, driving in from 30 to 50 mares, posting as many men at regular intervals on the outer part of the circle, and, by means of shouting, shrieking, and lashing, driving the animals fast and furiously round and round the circle, thus treading out the wheat from the ears. This is called *la trilla*, primitive, indeed, but highly satisfactory to the simple farmers who do it, as they make this the occasion for a general feast on the farm, winding up the business of the day with copious libations of *chicha* (sweet grape cider). On each farm live a number of *inquilinos*, or farm labourers, who are allowed a house to live in, a small piece of ground sufficient to cultivate enough maize, pumpkins, potatoes, and onions for the use of their families, and where they can keep a few hogs and fowls, grow grapes, oranges, peaches, quinces, &c. Peaches grow almost wild, as do quinces. The valley of Aconcagua is celebrated for its fine quality of walnut, honey, wax, potatoes, onions, &c. About 3,000 tons of walnuts are gathered yearly in Chile, 2,000 tons of honey, and 300 tons of wax. The *papa colorado*, or red potato, is grown in quantities, not only sufficient to supply all the midland and northern provinces, but to be largely exported to Peru and Ecuador, and sometimes to Panama and intermediate ports. They hay grown in the valley is sufficient to supply all the northern provinces and nitrate regions, and to export many thousands of bales to Peru and the Brazils. Ship loads have also been sent to England. The same broad valley from Las Vegas to Los Andes is planted for many leagues, (as far as the eye can reach, north and south, with the vines of the black grape, from which is made *chicha* (cider) by boiling, sieving, and fermenting grapes together with the skins. It is estimated that 1,000,000 gallons of good sound wholesome claret could be made yearly from the grape crop of this valley. Don Guillermo Brown is the proprietor of a large vineyard, and produces great quantities of first-class claret. It is called "Vino escorial de Panquehue," the latter being the name of a village in the vicinity of the estate, near which is also the large estate of Errazuriz, producing excellent wines similar to those of the Brown estate. Grape culture extends also from Huasco to Cauquenes, or about 550 miles north and south. Delicious sweet muscatel wines are made in or near Huasco (north), and semi-sweet wines are made in Tome and Cauquenes (south). There seems to be no limit to the producing capacity of the soil, which is greatly favoured by the facilities offered for irrigation by the numerous streams of melted snow which can be, and are, trained in any required direction as they rush towards the Pacific Ocean, fertilising the lands through which they pass in a constant stream. This, of course, is applicable only to the central and southern provinces. The northern portion of Atacama, and all of Autofagasta and Tarapaca are rainless regions.—*Journal of the Society of Arts.*

USES OF TOBACCO JUICE IN FRANCE.

All tobacco shops in France are compelled to keep a stock of what is called "tobacco juce, rich in nicotine and guaranteed." This is manufactured by the tobacco monopoly in Paris. The article, it is claimed possesses the following advantages:—(1) It is free from all matter susceptible of fermentation, and keeps for an indefinite period if in closed vessels. (2) It contains no resinous matter, and is almost transparent, therefore, it does not injure or clog the spraying machines, and does not stain plants or flowers or the wool of sheep. (3) It has a Government guarantee as to the proportion of nicotine it contains, which never varies. This product, it is also claimed, contains from five to six times the quantity of nicotine that may be found in ordinary tobacco juice, and that, therefore, one-fifth to one-sixth of the quantity will accomplish the object to which it is applied. For spraying purposes the product is employed in the proportion of one part of juice to one-hundred parts of water. It is stated that the spraying of plants should be done after sunset, and that they should be sprinkled with clean water on the following day. For fumigating hothouses the proportion is one part of juice to five of water. The mixture is sprayed upon bricks or iron sheets heated to a temperature sufficiently high to produce rapid evaporation. It is claimed that insects and parasites are absolutely destroyed by this process. It is said, further more, that the proportion is most efficacious for the destruction of all insects in cattle, as well as being a preventative of all manner of parasite attacks. For these purposes the juice is mixed in the proportion of one part to twenty of water. It is recommended that the lotion be not used as a general bath but applied gradually on limited surfaces. It should not be brought in contact with sore or erosions of any kind. The benefits accruing from the use of

these mixtures are said to be greatly enhanced by mixing 100 grammes (about 3½ ounces) of soda crystals with each litre (1·7 pints) of diluted juice. Regarding the use of this product in the Alpes Maritimes, the United States Consul at Nice says that it is rapidly coming into general favour for all the purposes mentioned above. He has seen it used with complete success in curing what is popularly called "le noir." This parasitic affliction is not confined to orange, lemon, olive, and other trees, but has been most disastrous to such vegetables as potatoes, beans, peas, tomatoes, &c. He has also seen whole rows of orange trees so thickly coated with parasites that every leaf appeared coated with soot (hence the popular appellation, "le noir,") and he has been enabled to verify the fact that three or four applications of the lotion have prevented the disease from attacking new leaves, and have caused the disappearance of the black deposit upon those attacked. A proprietor of an olive grove in Nice has recently stated that the use of the juice in combating "le noir," which has destroyed many thousands of olive trees in the department, is most costly, but at the same time very efficacious. The spraying machines used to spread the mixture are the same as those employed in applying sulphate of copper to vineyards. Efforts have been made to ascertain whether the use of tobacco juice would not be more desirable in treating vines for the cure of the oidium—a parasitic disease of the vine leaves—than sulphate of copper, but it appears impossible to discover anyone who has experimented with the tow treatments. It would appear, at first sight, that tobacco juice would be preferable, as sulphate has always been considered a preventive of attacks upon the grapes themselves, especially after the bunches are completely developed, whereas the oidium attacks only the bases and indirectly the vitality of the plant.

FUMIGATION OF TREES.

The fumigation of trees for the destruction of insect pests has for some time been extensively used in California and other parts of the United States. The process will probably soon come into use in New South Wales, for Mr. W. J. Allen describes in the *Agricultural Gazette* of the Colony some very successful experiments in spraying and fumigating for red and other scales on orange trees. The tree to be treated, is completely covered with a tent, and is subjected for netrly an hour to the fumes of hydrocyanic acid, produced by the combination of sulphuric acid and potassium cyanide. The number of men generally employed in a fumigating gang is four or five, according to the size of the tree. One man introduces the chemicals, another looks out for the generator and measures the acid, and two or three handle the tents. Such a gang can handle from thirty to forty medium-sized tents, and cover four to six acres of orchard in a night. Fumigation is to be preferred above spraying, because the trees are not in any way damaged by the fumes, except in the case of a few of the tender leaves, while the solution used in the sprays must to a certain extent close the pores of the tree and slightly weaken it.—*Nature.*

MANGABEIRA RUBBER.

The current number of the *Kew Bulletin* contains an important article on the source of Mangabeira rubber (*Hancornia speciosa*). In consequence of certain objections to its use, the price has been but half of Para rubber. Recently, however, the price of Mangabeira rubber has advanced by reason of the improvement in the purity, and on account of its great suitability, when pure, for certain purposes. In consequence, the disparity between the price of the best sorts and that of Para rubber is much diminished. At the end of last year, a kilogramme (2lb. 3oz.) of the best Mangabeira rubber sold for upwards of 12 milreis (almost 8s.), a price not far short of that of Para rubber. An additional cause of the advance in price is to be sought in the change in making up the rubber; for, owing to the constant watch which is necessary to guard against adulteration by addition of iron or stones put in to make weight, pieces of rubber only half to three-quarters of an inch thick and two feet long by ten inches broad, the so-called "sheets" of commerce, are welcome in the trade.

Of recent years, the exploitation of this source of rubber has taken a considerable extension. While the intelligent collectors, who start from Bahia and work towards the interior, have only tapped mature trees, improvident itinerant collectors, making their own profit out of the pressing demand of the time, have in many places mischievously drawn on the supply and threatened its continuance.

The chief centres for export of Mangabeira rubber are Bahia and Pernambuco. A large supply is brought down the river São Francisco, and so to Bahia; and from this town, in 1889, 131 tons were exported: in 1892, 4,362 bales, to the value of £22,826; and in 1893, 3293 bales, to the value of £20,362. From Pernambuco were exported, in 1896 64 tons to the value of £1,800.* A small amount of caoutchouc from the Province of Matto Grosso (probably Mangabeira rubber) is exported down the Parana through Paraguay, and great quantities from Minas Geraes are shipped through Rio de Janeiro.

Recently the Province of São Paulo has begun to demand a place in the consideration of rubber export. Regions here, such as that through which the Mogyana railway runs, are exploited, even by persons coming from Bahia for the purpose, the owners of the land receiving, in return for the permission they grant, one-third of the clear profits. A worker can collect about 6½ lbs. of rubber per diem, and receives on the spot 75 mileris £(2 9s. approximately) (per arroba 32⅓ lbs.). The arroba is sold in London for 200 milreis. In the first half of the year 1898 no less than 76,498 kilogrammes (approximately 78 tons) of rubber were passed over this railway, and yet the railways of Paulista and Sorocaba equally traverse the country where the Mangabeira tree grows. In consequence of the increasing trade, Santos has become an important centre for rubber, and there, as at the town of São Paulo, now exist mercantile houses whose principal concern lies in this business.

In this Province an idea of the importance of cultivating and protecting the tree is arising. Many coffee-planters are turning their attention to the sowing of *Hancornia*, and seed is already hard to procure. The Govrnment hoping, by means of the duty on rubber (now standing at 13 per cent. *ad-valorem*), to recuperate its fiances, which have become disordered by the depreciation of coffee, has instructed Dr. A. Uchoa Cavalcanti, Acting Director of the Agircultural Institute at Campinas, to inspect the territory in question; and, further, the Congress of the State has decreed that the Mangabeira trees shall be protected, and its cultivation extended, as is advisable.

Although but little is known so far of the cultivation of Mangabeira, it may be said that there is a considerable probability of it becoming an important tree in rubber-culture. The apparently easy accommodation of the tree to soil and climate, its early and considerable yield, together with the fact that even under the rough treatment of the Indians it preserves its fruitfulness, and also the facility with which it can be cultivated, promise a future. And, taking a wide view of its possibilities, from its presence in the red coffee-growing soils of the west of the Province of São Paulo, it appears suitable for the red earths of the German colonies of Africa, Usambara and Togoland alike, such, for instance, as occur at Misahohe, in the latter colony. For these soils it promises to be considerably better suited than the Ceara rubber plant (*Manihot Glaziovii*), and the Para rubber (*Hevea*), and will probably give better results than *Castilloa*, than which it is more hardy, earlier maturing, and smaller.—*Journal of Society of Arts.*

* Probaly an error for £18,000.

THE RUSSIAN TEA TRADE.

LARGER SUPPLIES FOR COLOMBO MARKET.

In a recent issue we gave a summary of the proceedings at the meeting of those interested in the Russian Tea Trade which was held on Dec. 8, 1899, in the Chamber of Commerce room to discuss the desirability of laying before tea proprietors the possibility of increasing the quantity of tea put up for sale in Colombo. In opening the meeting,

Mr. F M MACKWOOD (Chairman of the Chamber of Commerce who presided) said he was glad to see so many present. The meeting was called at the instance of one or two of the Russian gentlemen in their community, who approached the Chamber as to the possibility of their being able to address those interested in the tea trade here in the hope that they might be able to offer figures and arguments which would induce the proprietors of estates and agents of Companies to sell a larger proportion of their tea in Colombo than was at present being sold. He was not called upon, he thought, to make any further remarks and he would ask Mr. Tokmakoff what he had to say to them.

MR. TOKMAKOFF'S VIEWS.

Mr. S J TOKMAKOFF said that it was by the kind permission of the Chamber of Commerce that they were enabled to hold that meeting that day. In his speech at the Planters' Association Meeting. Mr. Lane, the Chairman of the Association, passed some remarks upon the Russian tea market, Mr. Lane had asked "one and all of the planters who could possibly do so, to encourage the Colombo market as far as possible, for he understood that there were complaints that there was an insufficiency of tea offered in the local market to supply all the requirements of the foreign buyers who were amongst them. Although the development of the Russian market was partly due to the way these people had taken to our teas, a part was attributable to the falling off in the quality of China tea, but in view of the absolute importance of pushing the foreign markets, it was the duty of every member of the planting community to aid and assist as far as he could in developing the Colombo market."

Some of the firms who dealt with tea in Russia got complaints from the Russian tea buyers, that they (the latter) could not buy enough tea in Colombo. Consequently, they were unable to enlarge their orders, as they could not get tea enough. They certainly wished to enlarge their business and the question was how they could enlarge their orders if the Ceylon people did not enlarge the market in Colombo. (Hear, hear). If they continued to put the same quantity on the market as before and the Russian traders enlarged their orders, then the price would go up. The total consumption of Ceylon tea in Russia in 1897 was about six million lb. out of which only about 440,000 lb. were exported from Colombo. That was about 12 per cent. In 1898 it increased nearly 50 per cent, the total consumption being about 11 millions as against six millions in 1897, and of this 11 millions there were sent direct from here 2,700,000 lb. or 23 per cent. The estimate of the total consumption of Ceylon tea in Russia for the present year was about 17,000,000 lb. of which it was hoped that about 14,000,000 lb. would go from Ceylon. They would see therefore, that the consumption of Ceylon tea was increasing (applause), and at the request of his countrymen, both here and in Russia, Mr. Mackwood had been kind enough to call that meeting so that the matter might be placed before the Planters' Association and the "Thirty Commitee" to see whether they could find it possible to increase the tea sales here. He proposed that gentlemen representing the firms who dealt in tea with Russia be appointed to write an official letter to the Planters' Association and the "Thirty Committee" explaining the reasons why they wished more tea put upon the Colombo market. (Applause.)

NEW METHODS REQUIRED: DO AWAY WITH GRANTS.

Mr. HEATH, seconded the resolution. He had been in China and had some experience of the Russian trade for a good many years. He had also been in Moscow. Last year, he made a trip in the winter with the special object of trying to get orders for the Colombo market. He had just come from there, having started a branch of his firm there. He was almost invariably met by the same arguments on the part of the Russian buyers that if they put large orders on the Colombo market prices were driven up to a limit much beyond London, and therefore they could not trade to such advantage out here. Consequently they restricted their orders and took up small quantities as they required from London. He thought that if the Thirty Committee were inclined to help them in this matter, they could do a great deal of good. He was sure that, for instance, instead of giving away so much money as had been lately spent in grants, if they were to distribute some of their money to aid the Colombo market, and the planters who were inclined to sell their teas locally, it would be to the advantage of everybody, and especially to the planters themselves. They were willing to spend money on this, and they were very anxious to do business in Russia and he thought it could be very easily worked. The amount of tea that could be taken in Russia was practically unlimited. They could take the whole crop, if they could get the right kind at a reasonable price. They were quite ready, too, to take Ceylon tea, as far as he could judge by the increase of the figures. He did not think it was a partiality for China tea that it had been so popular so long. Ceylon tea, wherever it went, was taken *on its merit* entirely—(applause)—and he did not think it required any pushing, provided it could be got at a reasonable figure, to compete with the China teas which had been taken previously. He thought, if the planters were inclined to help in the matter, and would put more of their breaks on the market, they would certainly do no harm, and probably they would do themselves a lot of good. At present it seemed to him their great mistake was they put everything on the market in one break—pekoe, broken pekoe, pekoe souchong and did not consider whether they were suitable for the requirements of Russia. He maintained that if they liked to pick out their broken pekoes and broken orange pekoes, which were not wanted at any particular time—they could be advised by the agents to that effect—they could send them to London, but give them a show with the pekoes, and pekoe souchongs and leafy teas which were particularly required for the Russian market, and at the worst, if they did not get fair bids they could always ship them to London, and they would not be losers thereby. But he was quite sure that

if planters and local sellers would only give the Colombo market a fair amount of tea, so as to give local Russian buyers a good selection, they would find that the demand from Russia would be enormously increased, and that instead of a few millions, as at present, it would be double and treble the quantity, provided that local Russian buyers were well backed up. He was certain, that the fact of any one firm starting a branch locally and pushing the sale of tea for all they were worth did more good than all the grants given by the Thirty Committee since the time the fund was started. He believed that most of the buyers would bear out what he had said. He begged to second the motion.

The CHAIRMAN said that as regarded liberty of speech it was advisable that the meeting should take the form of a Committee meeting so that members could speak more than once and ask any questions they wished.

SMALLER BREAKS WANTED, AND MORE VARIED.

Mr. HEATH understood that very often a planter would send a break down to this market for which he wanted a good bargain and marked it "X. Y. Z." The broken pekoes people were, perhaps, suspicious of it, as they did not know the tea and no fair bids were made; but the pekoes and pekoe souchongs required for Russia got fair bids. They said that was a mistake and they would not send the whole break home because people were prejudiced in London if they knew that it had been shown in the Colombo market. To obviate that, could not some of the big concerns try half their breaks on this market and ship the broken teas home? Everyone knew that they could buy this particular class of tea for Russia so that it would be no advantage to put up these teas here. He thought that if the planters sent part of their lots to London and some of their leafy teas here, they would find that they would get very good offers, in fact, far better than in London, in many instances, provided the teas were suitable. Of course some kinds could not be bought for Russia at any price. It seemed to him to be a mistake to put up the breaks as they did at present.

RUSSIA BUYS ONE-SIXTH OF COLOMBO TEAS.

Mr. WALTHEW thought it would be interesting to mention that at the last auction 165,000 lb. or about one-sixth of the total was bought for the Russian market at prices considerably over London. The figures he had quoted were collected that morning from the various buyers in Colombo.

The CHAIRMAN said that to him two points seemed to stand out clearly on which he thought it would be quite fair for them to ask for information, at least with reference to one of them. As to the other there might perhaps be a certain amount of delicacy as trenching on individual sources of interest. The first question they were all interested in was this. They knew that Ceylon tea was increasing in quantity annually, and it would be a great comfort for them to know that there was any one country or group of countries that would be likely to take an increased quantity of tea each year so as to work off the surplus. The first question that he would therefore ask his Russian friends was this. At present Russia was supplied from the two markets, Colombo and London practically, and it amounted to so many million lb. a year. The first question he would ask was, if there were greater facilities and greater quantities of tea put in the Colombo market would it mean that they should simply sell more in Colombo for Russia and less in London than at present, or did it mean that owing to the facilities offered here, they should actually increase the total quantity of tea sent to Russia from here irrespective of what they might do in London. In other words would they buy more tea here and less in London? If so, there was no great advantage as regarded getting rid of surplus teas. The other question was this. He could quite understand that that gentleman would not care to go into detailed figures showing that it would be of advantage to the planter to sell in Colombo in preference to London, because there were all sorts of interests concerned—there were the Russian interests in London and other things. It was quite possible that they might go more into detailed figures in addressing a letter to the Planters' Association and the Thirty Committee where communications of that description were often held to be of a confidential nature and not made public.

Mr. HEATH said, with regard to the first question of the Chairman as to whether more would be taken if more and a better selection were offered in Colombo at a reasonable price, he thought there was no doubt that the sale of Ceylon tea would be enormously increased if they could show importers in Russia, the Continent and other countries that there would be material advantages in giving orders in Colombo.

The CHAIRMAN:—The total aggregate sale?

Mr. HEATH:—Yes, certainly. But if they move round the Russian firms and tried to get orders and then found that they were not in a position to buy in Colombo, people would naturally think that they had been wasting their time and had been talking nonsense, and that these people would go back to China tea, or whatever they had been taking previously. They had to give everybody some inducement and prove to them that what they were telling them was true.

The CHAIRMAN:—In other words if you get more Ceylon tea, the Russians would take less China tea.

Mr. HEATH thought there was no doubt about it. It was a question of price. If they gave them a better article, as they thought Ceylon was, at a lower price, they would certainly take more because it suited their taste.

Mr. WALKER pointed out that an advantage in selling tea in Colombo was that they saved the London charges and that tea could be landed in Odessa for ½d as against 1⅝d in London. If Russian buyers were prepared to give the same price as to the seller in London they would still have the advantage.

Mr. TOKMAKOFF thought the figures he had given as to the consumption of Ceylon tea in Russia spoke for themselves, and in his opinion the increase of orders here would not decrease the London market. There had been an increase from 11 to 17 millions and very probably the consumption next year would be 24 millions.

The CHAIRMAN: I hope so.

Mr. RENTON said it had been remarked that the advent of one Russian firm here had done more to bring Ceylon tea into Russia than the Thirty Committee. He would like to ask who made the first efforts to introduce Ceylon tea into Russia. Eight or nine years

ago when it was first attempted they were told, as they were now being told in Germany and France, that Ceylon was not known as a tea-growing country. It was very much the same thing in Russia. But the Thirty Committee had made known the fact that there was an island called Ceylon which grew tea and asked all those who were in the habit of drinking tea to try the Ceylon growth. The very fact that they began in a small way to make Ceylon tea known brought before the attention of the Russian buyers and—he would not say compelled but,—induced them to give Ceylon tea a trial. Now that the work had commenced and now that the Russian buyers had formed a trade for themselves it was probably no longer necessary to make grants, but he was perfectly certain that the first effort made seven or eight years ago on behalf of the Thirty Committee laid the foundation stone and had been the means of bringing the Russian buyers here (applause). With reference to what had been said as to shipping the broken teas and putting only the leafy teas on the Colombo market, could not the Russian buyers do as those in other countries did, and try to a certain extent to cure or alter the taste of their constituents so that they might be able to buy a proportion of broken teas. If other markets, such as the Australian, English and Irish, were willing to take a percentage of broken teas, why could they not alter the Russian taste too. Surely they would learn in time that the quality of tea did not merely depend upon its appearance. Surely if it was too strong it was only a case of watering it down, was it not?

Mr. HEATH said it did not suit them at all. As buyers they had simply to buy what they were told. If a man sent an order for pekoe at 40 cents and he sent broken pekoe it would probably finish the business.

Mr. RENTON.—But could they not be induced to buy broken pekoe?

Mr. LAMPARD said that every house in London interested in the trade kept their own special buyers both for leafy and broken teas and so on; they were absolutely separate things.

Mr. RENTON was very glad to hear that; it was something worth knowing. He would like to suggest, however, to the Russian buyers that they should try to make a market for the broken teas.

Mr. TOKMAKOFF said he had sent samples of small lines and got orders for broken pekoes, and he wondered why other firms did not do the same thing. (He was understood to add that some of the biggest firms bought broken teas on the London market.)

Mr. RENTON thought it would be a drawback to put one or two or three lines of tea on the market here and send the rest home. Estates that shipped tea here would want to sell the whole lot. If they did so there would be an accumulation of broken teas in the Colombo market, for they would not be able to find buyers. If this were carried out too much broken tea would come on this market. That was a point on which he was glad to hear that Mr. Tokmakoff had tried the Russian market and to make the tea known. He feared that it would be difficult to get leaf teas sent here and broken teas sent home, estates preferring to sell all or nothing. Buyers here knew very well that teas put up in Colombo and withdrawn were tabooed in London and would never get their proper value.

Mr. HEATH thought that Mr. Thomson of Messrs. Finlay Muir & Co. would probably be able to give them some information on that point, as he understood that when they could not get the price they wanted for breaks here, these breaks were sent home.

Mr. THOMSON took exception to that remark. It was very seldom that they withdrew teas, and if they were withdrawn that did not make the slightest difference to their selling in London.

The CHAIRMAN asked whether the trade in London would be able to discriminate whether tea was not going home through third hands.

Mr. THOMSON did not think that any broker in London having printed the tea as being sold on any company's account or estate account, would question the fact at all. They would take it as estate tea.

Mr. LAMPARD said they had to study the requirements of the Russian market, and the point that weighed with him was that although there were very cheap internal rates, still with these advantages frequently tea could be bought very much cheaper in London than in this market. He was not speaking from any particular point of view about this thing, because his interests were quite equal. The same point really applied to the whole of the foreign trade which depended upon the supply of the local market. He thought Mr. Lane, the Chairman of the Planters' Association, would bear him out when he said that was a point he had been hammering at ever since he came to Ceylon. He came here chiefly with the idea of pushing the Russian business which had gradually grown to a point which made the men who dealt with it say that they must go on the same lines with regard to Ceylon as they had hitherto done with regard to China. It was the same feeling all the world over. They preferred to pay equal rates and get their goods direct, rather than get them *via* London and it must be in the interests of the producers here to study the local market. They had to study the rates of produce from here to London, and they would find that it would cost them at the cheapest a fraction over one penny. Roughly speaking it was one penny three farthings, and from here direct, it took about one halfpenny per pound, and in addition to that they had more favorable internal rates for transit to Moscow. If they consider these points and allow the market to be supplied with a larger quantity of suitable tea, it stood to reason, that the trade would go forward with leaps and bounds. In studying the local market, they were not studying the interests of one particular country, but the only possible chance of getting the tea up to paying level, and that was by opening fresh markets. The danger that Ceylon had was in concentrating the supply in one particular market. If they supplied this market they would gradually get away with the surplus, and drive it into countries direct where all the surplus would be taken up and tea kept at a paying level.

Mr. THOMSON said that every house of any size was represented in one way or another by agents in this matter, as well as probably every foreign trade outside England.

Mr. HEATH thought there was no doubt that buyers on the Continent generally would far rather import their teas direct than buy in London, if they could get equally good value. He thought it would be the experience of all the buyers here, that preference was given to importing direct.

Mr. RENTON thought he could corroborate that.

The CHAIRMAN thought Mr. Renton had hit the nail on the head very fairly and clearly. If they wanted those who produced tea and had the disposal of it to put only certain grades in greater proportion on the local market, and ship the remaining grades to London, it seemed to him that those remaining grades would create such a glut in the market at home that they would run the prices down of those grades quite enough to balance the relief they would have in selling their leafy teas. That was the difficulty and the true solution of the difficulty was that if the Russian buyers wanted to assist them in the matter, and they should like to assist them, by putting larger quantities of tea in the local market, and as Mr. Renton suggested by getting the Russian people by degrees, however small it might be at the beginning, to take some of our other grades.

Mr. LAMPARD thought the wisest thing to do was to print the whole invoice.

Mr. LANE said his reason for coming here was to learn as much as possible on that very important point, because, as they were all aware the Planters' Association and the Thirty Committee were most anxious to develop the Russian —and in fact all foreign—markets. Mr. Tokmakoff had made a suggestion that a letter with certain suggestions should be addressed to the Thirty Committee. That would be the best way of meeting the difficulty, because they would have in writing the views of those who were anxious to develop the market. He had been anxious to hear whether there had been any suggestion made as to the reduction of duty on tea going into Russia, and how that would help in the introduction of Ceylon tea into that country, and to cause a greater demand for their tea. It had been proved that the reduction of the duty had been of great assistance in opening up different markets in other countries, and the Planters' Association, last year, addressed the Foreign Minister in hopes of getting a reduction on the duty on the European frontier of Russia. They made no reduction on the European frontier but they made a slight addition to the duty on the Siberian frontier. The duty of 1s 10½d on the European frontier fell very hard on Ceylon tea. He should like to hear from those who were likely to know something on the matter; whether they should press this subject still in the hope by reduction of duty and increasing facilities they could bring the tea within the reach of the poorer classes. He was very glad to see so many persons present interested in the market.

Another matter he would like to ask about was this. They said that the planters upcountry did not know what grades were required, but it was very difficult for them, to know, unless somebody interested in the development of the Russian market made it known. He was sure, after the report of that meeting came out and it was understood that pekoes and pekoe souchongs were the chief grades required for Russia, that there would be men—there would be lots of independent planters—who would be very glad of the hint and send their better and higher grades in the hope of securing better prices. Of course the sale of tea in the local market would depend a great deal on the prices. If encouragement was given, teas would be sent here; otherwise they would be sent to London.

Mr. TOKMAKOFF explained that all attempts to have the duty reduced on the European frontier had been unsuccessful. The Russian revenue—nearly 60 per cent—was derived from the duty on tea.

Mr. LANE said that with a lower duty there might be double the quantity of tea used and that would make up the amount to Government.

Mr. TOKMAKOFF said they tried this about three years ago, but could not manage it.

Mr. LANE said he would be glad to know whether Mr. Tokmakoff and his friends would advise the Planters' Association to keep on pressing the point. They had already addressed the Secretary of State, and the memorial of the Association had been forwarded through the Foreign Office to the Russian minister De Witt. A small concession had been made by the addition on the Siberian frontier of two pence, but they had asked for a reduction on the one and ten pence-half penny on the European frontier. Did they think it desirable, and likely to lead to success, if the P. A. again pressed the matter back by the Chamber of Commerce and the Russian interests in Colombo?

Mr. TOKMAKOFF said he would not be sure of success, but he was perfectly sure, that if the duty was reduced the Russian Government would not lose anything, because the consumption of tea would increase.

THE STERLING COMPANIES.

Mr. RENTON thought the people they must go for were the London sterling companies. Of the rupee companies who had agencies in Colombo, fully 80 per cent of their teas were sold in the local market, and he thought most of the independent proprietors sold their teas too. Of the large sterling companies, practically the whole of their teas went to London, simply because the London brokers and directors and the bonded warehouse men were all interested, and must have their pickings out of them. (Laughter.) They should make a special appeal, not to the Directors, and not to the Secretaries of the London Companies, but to the shareholders.

Mr. G. THOMPSON said he believed his firm represented a fairly large number of sterling companies. Of the Muir companies he had persuaded them to sell half their tea locally and half in London.

Mr. RENTON said that sterling Companies he represented also sold their teas here.

After some remarks by Mr. Walthew and the Chairman as to the cost of putting down tea in Russia from Colombo and London,

Mr. G. H. ALSTON said that he had for many years endeavoured to get sterling Companies to put the tea in the local market and it was chiefly with the object of backing up his own views on this subject, that he was so pleased to see that this meeting had been called, so that they might show that other people were interested in it.

Mr. LAMPARD said the Russian firms would not, of course, pay the same rates in Colombo as they did in London, but perhaps there might be something to divide between them, something for the planters, and something for themselves.

The Hon. Mr. CAMPBELL said he did not know whether it was worth while for him to state, but he did not mind telling them, that he put one estate's tea on the local market a year ago, with fair results, and has just got permission to put another estate's tea on the local market, which would amount to about a quarter of a million lb. per annum. (Applause.)

Mr. LANE said, he supposed that application would be made to the "Thirty Committee."

The CHAIRMAN said they had received information which must be a gratification to the Russian buyers in this market, inasmuch as what they were urging them to do, had been taken up by a good many of them. In his own small way he had succeeded in getting permission to sell certain classes of tea which were serviceable for this market, allowing the rest to go home, but so far, he could not say which way the result would work. On the other hand, they had definite information of efforts which had culminated in success, some of them quite recently, efforts which had reached the point of considerably more quantities of teas being put on the market; and no doubt, if these increased quantities met with the success, with which presumbly the previous quantities met, he did not think they need now have any fear of this market in course of time not being adequately supplied. He had been asked as regarded the address to the Planters' Association or Thirty Committee, to say that the following five gentlemen might form themselves into a sort of letter: writing committee, if they might put it in that way, viz., Messrs. Heath, Tokmakoff, Tchokoff, Thomson and Lampard.

Mr. LAMPARD said that as he was going to Calcutta he was unable to act, and suggested the name of Mr. Croll.

On the suggestion of Mr. RENTON, the CHAIRMAN said that the letter drafted by the committee might be put in such a way, that copies of it might be sent to those in Colombo who were interested in the matter, and had some influence as regarded the disposal of tea. If that could not be done, he might draw up a separate letter.

The CHAIRMAN in declaring the meeting closed expressed the obligation, that those present were under to the Russian gentlemen for coming there and laying their views before them.

Mr. THOMSON suggested the draft of the letter should be sent to the Chamber of Commerce, who should send it to the agents of the Sterling Companies here.

The CHAIRMAN.—I think I can say on behalf of the Chamber, that we should be quite willing to act in such a matter.

On the motion of Mr. Renton a vote of thanks was passed to the Chairman, and the proceedings terminated.

PRODUCE AND PLANTING.

LOW-PRICED TEA.—On the subject of low-priced tea, a correspondent of the *Grocer*, Mr. Hicks, of Leman-street, writes: "Some time since you were kind enough to insert some letters for me upon the position of the tea market and the inadvisability of pushing low-priced tea. I pointed out then that no provision was made for a rise in the market. The position to-day is one which is worth the attention of every grocer. The facts are that, with a low exchange some three years ago, and a considerable amount of overproduction, tea reached a very low level, and a very uneconomic one. The rate of exchange has greatly increased, making it quite unprofitable to sell tea at the prices which ruled some time ago. At the same time, the consumption of tea abroad has largely increased. The stocks of China tea, which used to be a large factor in low prices, have been consumed, and as practically there is nothing to be seen on tea laid down under 6d in London there is no reason why for some time the market should be under that price. Up to the present time high prices have generally produced large supplies, but as parts of some tea plantations have actually been abandoned it does not seem as if there were any new inducements to put new ground to tea to any large extent, and until that is done, and the tea is ready for picking, there is not likely to be over-production. After all, the shilling canister is not one to reflect credit either to the retailer or to the wholesale man, and I think that every retailer would be studying his best interests if he threw the weight of his influence with his customers into educating them to higher things. We hear a lot of talk about cheap tea, but tea is not a particularly cheap thing. It costs a good deal to produce to place in chests and lay down ready for the grocer, and a heavy exchange adds largely to the cost; and, with so many steamers taken up for transports, freights will be exceptionally high. It is difficult to see what the advantage ever was to the retailer to have tea advertised at a price which was practically impossible to maintain. There never was any real profit in tenpenny tea, neither was there any likelihood of there ever being any; and, as most people worship the god of low prices, it would no doubt successfully divert their purchasing powers from better teas in the direction of no profit."

THE NEW REGULATIONS.—It is announced that the new regulations in regard to weighing tea by the Custom House, which it was hoped would have come into force at the beginning of October, are to commence on December 1. Under the old system producers were liable in an extreme case to a loss of 30 oz. in a chest in addition to the 1 lb. draft. Under the new regulations this possible loss in taring is reduced by 50 per cent.—*Home and Colonial Mail.*

INDIAN TEA ASSOCIATION (LONDON).

The following is an abstract of the proceedings of a meeting of the committee held on Nov. 21. Present: Messrs. D. Cruickshank (chair), R. Lyell, J. Riddell, F. A. Roberts, A. G. Stanton J. N. Stuart, W. H. Verner, C. W. Wallace, and S. A. Went. The proceedings of the last meeting held on Tuesday, 7th inst., were read by the Secretary, and confirmed.

Copies of correspondence with Calcutta, which had been previously circulated to the members of the committee, were laid upon the table.

ASSAM LABOUR BILL.

After discussion it was decided that the following gentlemen be appointed a sub-committee to consider the provisions of this Bill.

REGULATION OF SALES.

The following has been issued to the members of the Association by the secretary, Mr. Ernest Tye:—

Referring to the general meeting of importers held on July 26th last to consider this subject, I have the pleasure to inform you that definite adhesions have been received from members and others, representing over 100,000,000 lb., of Indian tea. This represents the bulk of the Indian tea imported on garden account and also a good deal of Calcutta bought tea. The scheme adopted by the general meeting of July 26th has now been in operation since the beginning of August, and has worked most satisfactorily. I am instructed by the general committee to hand you herewith copy of the report received from the regulating committee, to which I am to ask your special attention. You will observe that in the opinion of the regulating committee the work has tended to steady the market, and my committee unhesitatingly endorse this opinion.

The following is the report of the Regulating Committee referred to in the foregoing:—

The Tea Brokers' Association of London, 118, Dunster House, Mincing Lane, E.C., Oct. 20.

The Regulating Committee beg to report as follows:—

1, That in accordance with the rules agreed to by the Indian and Ceylon Importers' Sub-Committee they were elected by the General Committee of the Tea Brokers' Association to carry out the said rules, and commenced their work on August 11.

2. That up to the present time the scheme, so far as it concerns Indian Tea, has worked satisfactorily, no opposition having been shown by importers of Indian Tea to the necessary postponement of the sale of their Teas, when so decided by the committee; and buyers have in many cases expressed satisfaction at a limit being placed to the quantity offered weekly.

3. That the committee regret that so few importers of Ceylon Tea availed themselves of the opportunity of submitting particulars of their Teas for regulation at a time when it would have been advantageous to have done so.

4. That with a view of obtaining a more satisfactory result, and one fairer to the present subscribers to the agreement, this committee would urge upon the Indian and Ceylon Associations the desirability of doing all in their power to induce those importers to join who have not already done so.

(Sd.) ARTHUR THOMPSON, Chairman of the Committee.
—*Home and Colonial Mail*, Nov 14.

BRITISH AND BENNINGTON'S TEA TRADING ASSOCIATION (LIMITED).

At the fourth ordinary general meeting held yesterday at the company's offices, Southwark-street Mr. John H. Moore who presided, remarked that the net profits of the year were £11,756 against £10,797 for the 12 months ended September 30 1898 and this, notwithstanding the fact that considerable disadvantages had arisen owing to the high range of prices ruling in the tea market during the greater part of the year. The actual balance on profit-and-loss account available for distribution was £8,926 against £8,378 in 1898. The whole of the preliminary expenses attending the formation of the company, amounting to £1,259, had been written off, and consequently about £450 would be available in future years either for dividend or an addition to the reserve. The average net trading profits of the first three years of the company had exceeded the certified average profits of the combined businesses for the three years immediately preceding the formation of the concern, and this notwithstanding several adverse circumstances. Neither the company nor its predecessors had ever adopted the practice of weighing tea in the wrapper, and he denied that such a practice could be called "the custom of the trade." The board in May last paid dividends upon the preference and ordinary shares at the rate of 5 per cent. per annum; they now proposed to pay the usual dividend for the half-year upon the preference shares, and they recommended a dividend at the rate of 7½ per cent. per annum upon the ordinary shares. He concluded by moving the adoption of the report. Mr. George Bennington seconded the resolution which was carried.—London *Times*, Nov 21.

DEPARTURE OF AMERICAN BOTANISTS.

The American Botanists, Messrs. D. G. Fairchild and Barbour Lathrop, of the Agricultural Deparments of Washington and Chicago, respectively, whose arrival by the "Friedrich der Grosse," we chronicled on Thursday last, left yesterday for Singapore. Their hurried departure, before they were able to pursue their tropico-agricultural investigations here to any considerable degree, was owing to the necessity they were under of pushing on to Java as quickly as possible, and the inconvenience that would arise from taking a later steamer. Mr. Fairchild writes to us expressing his regret that he was deprived of the chance of spending a few days in Kandy and other parts of the island.

THE GERMAN SCIENTISTS.

Drs. Benedict Friedlaender and August Ewers, who arrived at Colombo about a month ago on a scientific expedition to the East, left the island for Tuticorin on Saturday last. During their stay in Ceylon they were busy collecting specimens and information regarding biology and the popular belief among the natives with regard to the influence of the moon on human beings. They also travelled upcountry, where among the other places visited were Mihintale and Anuradhapura. The summit of Pidurutalagala was also ascended and they seemed pleased with everything they saw. Dr. Friedlaender took a collection of Sinhalese and Sanskrit books along with him to help him in his researches. From Tuticorin they will make a tour through India and thence will proceed to the Samoan Islands, returning home after about six months.

COCOA IN AMERICA.

The imports of cocoa show a large gain over previous years. For nine months ending September 30, 1899, they were 28,926,474 pounds—a gain of over 10,000,000 pound over the same time in 1898, and 8,000,000 pounds over 1897. In only two previons years have the imports for the entire year exceeded the imports for nine months of 1899. The cocoa industry is growing fast.—*American Grocer.*

TIMBER IN VICTORIA.—Mr. Perrin, the Victorian Conservator of Forests reports that between the years 1888-89 and 1897-98, 615,603 valuable timber trees were planted by hand in permanent sites. In addition to these some 380,000 blue gums and sugar-gums are thriving at Havelock, Majorca and You Yangs. These, however, were sown broadcast and thinned out afterwards. The number of applications for surplus stock at the Macedon nursery continues to increase year by year. Nearly 50,000 were distributed from Macedon during 1898. The three most popular trees for the northern plains are the sugar gum, pepper tree and locust tree, and to these may be added the tallow wood of New South Wales.—*Sydney Mail*, Nov. 25.

THE RUSSIAN TEA-TRADE WITH COLOMBO.—We have to remind all those concerned—and not a few firms will be interested in the occasion—of the meeting to be held at the Chamber of Commerce on Friday at 3 p.m., to discuss the possibility of increasing the quantity of tea put up for sale in Colombo. Planters are naturally unwilling to favour a move that might result in a lowering of prices; but it is pretty certain that the large Russian firms will not inundate local agents with further orders that will only tend to raise the prices in the Colombo market. It would, therefore, be advisable that a favourable consideration should be given to the requirements of Russian firms which are fully cognisant of the high quality of Ceylons, but which will probably continue to serve themselves with Chinas and Javas unless they can obtain increased supplies here at present prices. For this it is imperative that there shall be larger deliveries for the Colombo sales.

DIGALLA CEYLON TEA ESTATE CO., LD

The following is the report of the Directors to be submitted to the Third Annual Ordinary General Meeting of Shareholders, held at 20, Eastcheap E. C., on 5th Dec.:—

The Directors have the pleasure to submit the General Balance Sheet and Profit and Loss Account for the year ending 30th June 1899, duly audited.

	£	s.	d.
The net amount at Credit of Profit and Loss Account, after providing for General Expenses, Directors' Fees, Income Tax, &c., is	575	13	1
Dividends on six per cent. Preference Shares were paid for 1898-99 (less Income Tax) amounnting to	348	0	0
Leaving to carry forward to next year a balance of	227	13	1
	575	13	1

The past seasons in Ceylon has not been one favourable to the production of Tea. There was a long drought in the early part of the year and too much rain at other times, and consequently the Company's crop was some 50,000 lb short of the estimate; owing to this, and to the fact that a considerable proportion of the up-keep ou the 143 acres not in bearing has been charged to revenue, the Directors regret they are not in a position to pay a dividend on the Ordinary Shares.

The acreage of the Company's property is as follows:—

Tea in Bearing..	456	acres
Tea not in Bearing	143	,,
Jungle..	152	,,
Total ..	751	acres

The gross average price realized was 6.84d per lb., as against 6.17d per lb. last season, and the rate of exchange 1s 4½d, against 1s 3 27-32d.

The total crop amounted to 192,697 lb. plucked off 456 acres, of which 134 acres are in partial bearing, giving an average of 423 lb per acre.

Under clause No. 24 of the Articles of Association Mr. H K Rutherford retires on this occasion from the Board, and being eligible, offers himself for re-election.

The Auditor, Messrs. Harper Brothers, Chartered Accountants also retire from office and offer themselves for re-election.

TEA-BULKING IN CHINA.

A gentleman for some years in the China tea trade, has favoured us with the following description of a method for bulking tea, which he says is most simple and inexpensive. Four square wooden posts grooved on two of the adjoining sides, and several planks of (say) 18 inches in breadth are all that is required. These should be made into a large box, the posts forming the corners and the planks the sides. The box should be built, raised some four feet from the ground, the bottom being made of wood having a sliding trap-door in the centre, so made that the outlet can be enlarged or reduced according to the size of the leaf to be bulked. When the box is being filled with tea the trap-door remains closed. The tea to be bulked should be spread out in layers as thin as possible inside the box, one quality on top of another, until all the tea required to be bulked is inside the box. Now open the trap-door, and the tea will run out from the top, taking a little from each layer in its downward course, the result being *a perfect bulk*. The bottom of the box should be made slightly on a slope from the sides to the centre near the aperture, so that the tea may get away equally. By means of a zinc tube the current of the leaf can be carried direct from the box into a package or chest, standing on a lever scale. A sand-glass will illustrate the above on a small scale. Tea is bulked in China on the same principle as the above, but there, one side of the box is drawn away, and the packages filled from the tea that collects at the foot of the pile.—*Planter*, Dec. 9.

THE NILGIRI GAME ASSOCIATION.

OOTACAMUND, 11th Dec.—At the annual Meeting of the Association held on Saturday last in the Collector's Office, the following gentlemen were present:—Mr. C J Weir (President), Mr. C G Douglas (Honorary Secretary), the Hon'ble Mr. H P Hodgson, Mr. W L Edmiston, Mr. G Hadfield, Mr. E Hadfield, Mr. J E David, Mr. T J Kenna, Mr. J H Pascoe and Major T N Bagnall.

The Honorary Secretary presented the Report for the year ending 30th June, from which the following are interesting extracts:—

INCREASE OF GAME AND RESULTS OF PROTECTION.—On the whole we may consider ourselves tolerably successful in maintaining a fair head of game in most parts of the District, though the results of protection may not have made themselves everywhere apparent by increased numbers.

PROSECUTIONS.—The year's return of offences detected and punished under the Forest Act is the best on record since the Association began. This satisfactory result may be attributed to (1) a more liberal use of rewards; (2) better paid watchmen; (3) the great personal interest taken in preservation by some of our leading members. This last is simply invaluable.

THE NILGIRI GAME BAY.—In a former Report you were informed that two valuable registers were opened in the District Forest Office. One a game register and the other a register of shikaris well known to, and recommanded by local sportsmen of experience. It is greatly to be regretted that neither has proved a success.

TROUT.—Your Committee is as sanguine as ever regarding the ultimate success of this enterprise. In Major Grant, who has left the District, and whose services in trout culture have been annually recorded with due appreciation, the Association has lost an enthusiastic fisherman. The following are his notes for the season. He has only been a few months in office. I regret to say that the whole of the *Salmo Irridens* ova received this year was worthless. It had evidently been so for a long time, as in some cases it had altogeter rotted away and only the smell remained. It was clearly the fault of the people on board ship and I attribute no blame to those who conveyed it from Madras to Ootacamund.—*Madras Mail*, Dec. 13.

TEA DRINKING IN AMERICA.—In a letter (dated Oct. 21st) kindly forwarded to us by an American visitor, from Mr. Oscar Joseph (a nephew of Mr. F. C. Loos) who proceeded to America with a view to training for the Ministry, we have the following criticism from the writer, who is now at New Brunswick, New Jersey, on the quantity of tea now being drunk in the Eastern States:—"I have not yet tasted a good cup of tea in America. In the restaurants of New York, and even in private houses, where everything else is of the best, the tea is worse than what you get in any of the boutiques on the way to Anuradhapura. I have seen advertisements of Nettley's Ceylon and Indian tea. They evidently mix the teas here, and, of course, the real flavour of our superior tea is altogether lost. The Planters' Association should wake up if they desire to save the reputation of Ceylon tea in America."

DR. WATT IN THIS INDIA PLANTING DISTRICTS.

(By a Planter.)

In due time Dr. Watt will no doubt issue a valuable and instructive Report as the result of his observation during his

RECENT TOUR THROUGH COORG AND WYNAAD,

but as it will probably be some time before this Report appears, an account of his visit to Wynaad may be of some interest to planters. Dr. Watt took specimens of the canker on Ledgeriana cinchona, of the disease which kills the pepper vine, of a new blight on tea, and of the fungus on Liberian coffee. It is to be hoped he will not only name these pests, but, as he has done in the case of tea blights, recommend efficient methods of combating them. He also observed a mite preying on *Hemeleia vastatrix*, and thought this might lead to the discovery of some method of fighting this pest. Liberian coffee was found to be suffering from another fungus than Hemeleia and it is not improbable that as many planters have thought, it is this fungus that makes Liberian sickly and liable to Hemeleia, which it seems to resist when in a healthy condition. Similarly, the failure of Ledgeriana of late years may be due, not to deterioration of seed, but to a fungus which has mastered the plant. The new blight on tea is the two hundred and first to which that plant is subject; but blights are more prevalent in Assam, where plantations give 1,200 to 1,600 lb. of made tea an acre than on the Nilgiris, where tea averages only about 250 lb. an acre, and Dr. Watt thought well of the Wynaad as a tea District.

The management of tea has been so thoroughly worked out in Assam, and the results so amply recorded, that planters will be more interested in what Dr. Watt had to say on coffe. This related chiefly to the methed of pruning, to the importance of growing plants which supply nitrogen to the soil, and to the advisability of establishing a hardier type of plant than the present coffee tree. Experience has taught planters that of late years the wood most certain to resist leaf disease, and to crop well, is that found on gourmandisers and suckers, and that it is not possible to get the tree to crop as well at the bottom as at the top. Some fine all estates, therefore, have their trees in the form of umbrellas, and others in the form of a cup formed of a ring of great gonrmandisers rising from short primaries on a short stem. Dr. Watt condemned both the umbrella and gonrmandiser systems, on the ground that an enormous mass of old unproductive wood, often as thick as a man's arm, and full of knots, bends and dead sangs, had to be maintained in order to support a smaller extent of bearing wood. He thought quite as much bearing wood could he maintained on short primaries if the tree was trained in a pyramidal shape, such as it naturally assumes when young. In order to retain this form Dr. Watt would, as soon as the young tree has reached its proper height, cut the top pair of primaries at the joint from the stem, the next pair at two joints, the next at three, and so on till a foot from the ground is reached when he would remove all the primaries to admit a free circulation of air. From the shortened primaries young shoots should be encouraged to form a fan consisting of bearing wood and green wood for the following year the former being removed as soon as it has borne. When too much of a claw is formed, the primary is to be cut back just behind it, and when the primaries are gone, the tree is to be collar pruned that is, cut off 2 inches below the soil. The object of cutting below the soil is to prvent the formation of any dead wood as this causes decay to eat down into the stem. Dr. Watt believes that if the trees were thus kept free of all dead stumps to cause decay and hends to check the flow of sap, and relieved of the moses of old wood they now carry, they would be much less liable to blight. He thinks the high price released for "Faith" coffe this year is due to the system of prnning adopted on that estate. No doubt planters will experiment on a small scale on the lines Dr. Watt recommends; but many think the coffee tree will not stand such drastic treatment in these days of leaf disease, and condemn severe pruning and the stumping of old trees which often give only sickly suckers. The cutting under gronnd is, however, a new method, and may give better results than stumping at 6 or 9 inches above ground.

Dr. Watt was struck with the absence of nitrogen-forming plants amongst the weeds found in

COFFEE

and recommended the growth of dhal in open spaces, or among young coffee, and of *Albizzia stipulated* in thick coffee. He condemned the Erithrynas as nitrogen-forming shade trees on account of their liability to bug. Soil destitute of nitrogen-forming plants soon becomes sterible from the absence of nitrogen-forming bacteria. Dr. Watt took specimens of the various hybrids he saw, and was much interested in the experiment. He had some useful hints to give as to the necessity of protecting an approved hybrid from fertilisation by inferior forms, which would cause degineration in the resulting plants. It is equally necessary, however, to avoid degeneration from self-fertilisation only and good hybrids should be cross fertilised either by other good hybrids or by vigorous Arabica trees. Dr. Watt doubted if a cross with Liberian, now that this is so diseased would be likely to afford continued immunity from disease, and suggested breeding from the best Arabica trees in order to try to establish a pure blight-proof Arabica tree. The extraordinary vigour of the best Liberian-Arabica hybrids may however, preserve them from blight as all experience so far shows that such vigour is the only successful prevention of disastrous attacks of *Hemeleia vastatrix*.

Dr. Watt's visit is another proof of the

ABSOLUTE NECESSITY, NOWADAYS OF EXTENSIVE SCIENTIFIC AIDS

to agriculture being afforded by every Government which hopes to see its industries flourish. Such aid on any scale is alien to the official mind, which is mainly fixed on administrative measures. The perfection to which the Ledgeriana tree has been brought in Java is, however, entirely due to the labours of scientist in Government employment over some twenty years, and such expensive and continuous research is beyond the means of any individual or firm. The United States maintains a whole Department exclusively devoted to the discovery and prevention of blight, and to the introduction of the best manures, the best methods of cultivation, and the best varieties of plants to grow. It requires the exclusive attention over a considerable period of a man of Dr. Watt's energy, scientific attainments, and practical ability, to establish new and valuable varieties of crop bearers, and a successful system of combating pests.

SUCH A MAN IS BADLY WANTED
now by the coffee industry of South India. Hard as Dr. Watt worked on his recent tour, it is impossible he could effect much in such a hurried visit. A beginning in the provision of scientific aid to agriculture by Government has been made in South India by the appointment of Dr. Lehmann to advise the Mysore Government, and of Dr. Barber to advise the Madras Government; but such appointments must be multiplied considerably before the many agricultural industries of South India can receive the attention which they require, and which would be readily afforded them in the United States.—*Madras Mail*, Dec. 14.

TEA TARING.

THE REFORM SUSPENDED.

The following letter has been addressed to the Secretaries of the Ceylon and Indian Associations in London by the Commissioners of Customs:—

Custom House, London, Nov. 30.

GENTLEMEN,—The Commissioners of Customs direct me to acquaint you, for the information of the Ceylon and Indian Tea Associations, that, to their great regret, they have felt it necessary to postpone, for a time, the coming into operation of the London Port Order 39-1899, respecting the taring of Tea to the ½ lb. and an increase in the number of tarers, referred to in Mr. Prowse's letter of the 14th instant, No. 13728-1899. The date of operation mentioned in the Order is 1st December 1899, and the Commissioners hope that the period of suspension may not be long. Due notice will be given of the new date as soon as it has been fixed.

The Board desire me to briefly explain the circumstances that have rendered a postponement necessary. Throughout the correspondence that has taken place on this subject the Board have maintained the position that no action can be safely and properly taken on their part, unless it commands the general assent of the Tea Trade, both Importers and Buyers. They felt that, subject to the rights of the Revenue they could not lead the Trade but must follow it, if any change is to be made successfully in the methods of taring. Accordingly when the Indian and Ceylon and Tea Buyers' Association submitted the following proposals, on behalf of Importers and Buyers, coupled with the continuance of the 1 lb. draft, and of the present system of gross weighing, the Board felt no hesitation in agreeing to all of them that met with general acceptance, and fell within the province of this Department.

TEA TARING.

(*a*) If tare be to an even lb.—it will be entered as such.

(*b*) If it be to an even ½ lb. or over, it will be entered at next lb. above.

(*c*) If it be to a smaller fraction than ½ lb. it will be entered at next lb. below.

(*d*) No overtakers.

(*e*) Boxes (*i.e.* packages not exceeding 23 lb.) to be weighed and tared as heretofore.

(*f*) Increased No. of Tarers according to scale.

(*g*) If Teas are bulked, each package to be tared separately.

Terms (a), (b), (c) and (f) were objected to by none, and were therefore provided for in Port Order 39-1899. Term (d) was acknowledged to relate to a matter with which the Customs could not interfere. Term (e) required no action: and (g) alone presented any difficulty because it involved the repeal of General Order 102-1894, and a number of leading importers petitioned the Board to leave that General Order in force.

After mature consideration, the Board came to the conclusion that the Port Order dealing with terms (a), (b), (c) and (f) ought to be issued at once, as dealing with matters no longer in controversy, and that, as (g) was disputed, it would be fairer to both sides to preserve the existing option of either averaging or separately taring bulked teas.

No sooner, however, had this decision become known than the Board received a strong protest from the Tea Buyers' Association against the separation of terms (a), (b), (c) and (f) from (g), because the separate taring of bulked teas was an essential part of the compensation which the importers were to make for the concession of a ½ lb. taring on the part of the buyers. The latter also represented that the option of separate taring or not when tea is bulked, is no safeguard of liberty, because the buyers have practically no voice in its exercise, and the importers will always exercise it in their own favour. They moreover dwelt on the ease and therefore cheapness with which each case, which must be emptied in the process of bulking, might be separately weighed, as was the rule until 1894.

In the opinion of the Board it would have been inequitable to allow port order 39—1899 to come into operation in the face of this opposition. They have therefore postponed it in the hope that after further conference, the importers and buyers may either agree to adopt term (g) or make some other arrangements in common which will render that condition unnecessary.

The board have no bias towards one side rather than the other, but must always be the hearty well wishers of both. Their desire is for as accurate weighing and taring, and as just averaging, as circumstances render practicable, and their officers will spare no pains in contributing to the attainment of these ends. In the whole system of averaging tares, and of rounding weights up or down, which is no doubt ordinarily a matter of practical necessity, the Board would always wish to have the mutual consent of all parties concerned. The law in its full strictness recognises exact weights only.

I am to add that the Board earnestly trust that you will shortly be able to submit to them an agreement which will be fair to Buyers and Importers equally and will put an end to a dispute which is seriously jeopardizing the prosperity of one of the most important trades of the Empire.
—I am, gentlemen, your obedient servant.

JOHN COURROUX.

W Martin Leake, Esq., Secretary to the Ceylon Association,
and Ernest Tye, Esq., Secretary to the Indian Tea Association, 61, Gracechurch Street, E C.

REFORMS ON THE TEA TRADE.

The following is the conclusion of the article from the *Produce Markets Review*, the first part of which appeared in our last issue:—

BULKING AND TARING IN INDIA.

We alluded above to the great cost inflicted upon the Indian planter through the necessity for bulking and for separately taring their teas in this country. Some progress has been made with regard to bulking abroad, but it is inconceivable here why the system has not become

universal. Years ago we heard the old excuse about the dampness of the climate and the difficulty of keeping teas; but if the facts are as alleged, the difficulty can easily be remedied by such simple appliances as hot-water pipes. Then again, as regards the taring of the teas, the smaller gardens no doubt have to rely on rough native labour, and this is given as an excuse for the chests not being cut to scale. The excuse seems to us totally insufficient, and we can only ascribe the continuance of the existing system to ignorance. In these days when metal chests can so easily be obtained, as well as the beautifully made "Venesta" and other artificial wood chests, uneven tares seem simply inexcusable. It pays our sugar refiners to import ready-cut wood for such a cheap commodity as theirs and when a single manufacturer requires 40,000 or 50,000 cases a week of the size of a tea chest, it surely would be worth the while of Indian planters to import either the "Venesta" packages or wood cut in proper shooks from other countries, in places where the native labour and the appliances are so deficient as they appear to be in a vast number of cases. The planters also go far to necessitate re-bulking in this country by the excessive subdivision of their teas into different-sized leaves. This can only be effected by a costly system of sifting, in addition to the exposure of the tea to friction, which breaks a large portion of the leaves, and turns them into comparatively waste dust or broken leaf. We have long held that the planters would do far better to buy a reasonable-sized grocers' bulking and cutting machine, and then make much larger breaks of an average quality. The cost would be less, and, we believe in the long run, the relative price would be higher.

INCREASING PRODUCTION, LOWER PRICES, AND THE ARTIFICIAL RUPEE.

The production in India, Ceylon, and Java, is consequently increasing, for the fresh plantings are year by year coming into bearing. Even if another tea plant were not planted for the next five years, the increase would still continue from previous sowings. The consumption of tea in this country has reached its limit, and the next great consuming country—the United States—uses only something like one-sixth of what we use, and is at present greatly wedded to the flavoury China teas. The same is the case in Russia, and although we hope, and believe, that Indian and Ceylon teas will readily make their way in both these countries, the demand cannot be important for years; its progress is not quick, and the increasing supplies must therefore continue to deluge this market. The action of the Indian Government in artificially fixing the exchange value of the rupee at the rate of 1s 4d when the intrinsic value of the coin is something about 11d, is also most injurious to the Indian tea planters. In these depressing times it must to a large extent tend to ruin our own growers, or to divert the trade to the common tea of China, because China, owing to the unrestricted exchange for the dollar, enjoys an advantage of 2d in every pound of tea. While the possibilities of economies in the trade are great, we fear that the possibilities of decreasing prices are even greater, so that the question should be actively taken in hand. It is, therefore, obviously to the interest of the whole trade to take up tea reform in earnest. It is possible that the result of the coming depression will be the extension of something like the Central Factory system. If so, the small gardens would cease to manufacture tea, and would sell the green leaf to the larger operators, who can work better and more economically than the small growers. This is the system which long usage has established in China, and it is already beginning in India. These latter changes, however, are matters for the future, and the present necessity is for a simplification and modernisation of the tea trade, such as will greatly reduce the present unnecessarily high cost of distribution.

CONCLUSION.

In the above remarks we have given a short outline of the main changes required whether at home or abroad, for it matters little which section of the trade is benefited so long as expenses can be lessened. The necessity for reform must come home very forcibly to the producer, in consequence of the present great depression in values. It is true that for temporary reasons, very common teas have recently very considerably advanced, but we do not think that this can possibly last for long with the supplies coming forward. If it do so, and the price of common Indian tea is maintained, we shall shortly be swamped with common China Congou, which will bring prices once more down to a lower level. If there is no hope for a rise in the price of tea, but rather a strong prospect of a further fall in it, the only way to save the planters from ruin is economy in production and distribution. The mixture of the two branches of the trade in the above remarks is apparent and not real, for we hold that the whole tea trade is organised far too expensively, for the present scale of prices, and that economies in cost in any direction will benefit all sections alike.—*Home & Colonial Mail*, Dec. 1.

PRODUCE AND PLANTING.

RUSSIAN TEA.—The attempt at tea cultivation in the Trans-Caucasus has demonstrated that the tea-plant can be successfully grown in the country under existing climatic conditions, and further, that it is only necessary to surmount certain difficulties at present experienced in respect to the question of obtaining cheap labour in order to make tea-growing an industry of the district. A large Moscow firm erected a factory on its plantations last year, and the authorities on the estate belonging to the Imperial domains at Chakva have followed this example, and have set up a tea-making establishment of considerable dimensions. The yield of the tea crop has been good, and, comparatively speaking, fairly abundant. But the Russians like good tea, and this Trans-Caucasian tea is far below the standard of Indian, Ceylon, or China. Seeing, however, that tea can now be successfully grown in this region, writes our Consul at Batoum, in a report on Transcaucasian agriculture, "the Imperial domain authorities propose to encourage the cultivation of this plant among the peasantry, and with this object in view would gladly split up the area on their estates now planted with tea into small plots for distribution, on certain conditions, to the surrounding inhabitants to cultivate under their supervision. It is considered that a measure of this kind would induce a considerable proportion of the peasantry to cultivate tea, and as soon as it is known that fairly remunerative wages can be obtained for the collection of the leaf, a large number of women and children would willingly come forward and assist in gathering tea harvest, and by this means an important reduction in the price of labour would be likely to follow." So for the present, and for some time to come, Russia will want the usual supply from elsewhere, for our Consul takes care to point out that in the present difficult position of the labour market, owing to the absence of a good supply of labourers, it is evident that the expenses incumbent on the cultivation of tea in the Caucasus are so excessive that

if the production were to attain such figures as would enable even a small proportion of the demand to be satisfied, it could, nevertheless, not be sold at prices much below those which teas imported from abroad, and paying a heavy rate of duty, fetch in the markets of the Russian Empire.

REGULATIONS OF SUPPLIES IN SALE.

To the Editor of the *Home and Colonial Mail.*

SIR,—I have read in your last issue the report of the Indian Tea Association, in which, under the heading, "Regulation of Sales," it is stated, "that that scheme has been in operation since the beginning of August, and has worked most satisfactorily." The Regulating Committee, through their worthy chairman, Mr. Arthur Thompson, then go on to say that "no opposition had been shown by the importers of Indian tea to the necessary postponement of the sale of their teas, when so decided by the committee, and buyers had in many cases expressed satisfaction at a limit being placed to the quantity offered weekly." May I therefore ask a little space to offer a few remarks? I start with the fact that the total offerings of Indian tea in public sale in the year 1898 were 1,590,000 packages, which in round figures would average 133,000 packages a month. The contention in regard to regulating supplies has been that for month after month during every autumn the quantity put on the market bore no relation to monthly demand, but was entirely conducted on a "Devil take the hindmost" policy, thereby depressing prices by overloading buyers at one season of the year, and inducing a scarcity at another. The Regulating Committee was appointed to put this right, and it may therefore be worth while to examine the results of their labours since they started operations. The number of packages of Indian tea offered in public sale were as under:—

	unregulated. 1898.		regulated. 1899.
August ..	124,474	..	135,556
September ..	170,762	..	177,071
October ..	238,655	..	232,950
November ..	198,871	..	206,122
	732,762		751,699

These totals explain the reason why the scheme has "worked so satisfactorily," and one ceases to wonder that "no opposition was shown to the necessary postponement (?) of the sale of their teas by importers." One would also like to be introduced to the "buyers who in many cases had expressed their satisfaction that a limit was placed on the weekly offerings." Possibly had there been no regulating of supplies this season the consequences might have been disastrous. Who can say? But no one will contend that the committee has introduced any very radical change; and now that the attention of the Ceylon tea importers is drawn to the results as stated above they will surely hesitate no longer "to avail themselves of the opportunity" of being regulated. Walk up, gentlemen, there is positively no danger.

I am, &c., D. F. SHILLINGTON.

THE CALEDONIAN (CEYLON) ESTATES, LIMITED.

The second annual ordinary general meeting of the Caledonian (Ceylon) Tea Estates, Limited, was held at the offices of the company, 78, Gracechurch Street, on 30th Nov., Sir Alfred Dent, K.C.M.G., chairman of the company, presiding.

The SECRETARY having read the notice convening the meeting,

The CHAIRMAN, in moving the adoption of the report and accounts, said:—Although there is a very small number of shareholders present, other shareholders who are unable to attend the meeting will be interested to know what took place, so I will proceed to make a few remarks. In the first place I must express the regret we all feel at the absence of Mr. Alexander Ross, which owing to a rather serious illness. He always gives us most valuable advice, and I am sure we all miss him very much. The report will no doubt have been studied by all of you, and though we cannot call it a satisfactory one, still I think the shareholders will all admit that we have done as well as most of our neighbours, considering that we are only comparatively a young company. Our chief trouble this season has been the exceptional weather, which has reduced our crop to 489,687 lb. of tea, showing a deficiency of 67,8000 lb. as compared with the estimate. This, as stated in the report, is almost entirely owing to the weather, but as Mr. Stanley Ross, the manager in Ceylon, is here, he will explain to you the difficulties he has had to encounter better than I can. His report, received a short time ago, said that the rainfall for the first six months of the season was favourable to the flush of tea, but that the first three months of this year a severe drought came on, which caused the rainfall to drop to 11 in. This was followed by an unusually heavy burst of the southern monsoon, and a rainfall of 40 inches was recorded during the last three months of the season, which seriously interfered with the pruning and flushing. These alternate periods of rain and drought make tea cultivation extremely difficult. The gross prices of the tea are given in the report, and I think you will consider them fairly satisfactory. Perhaps the average cost per pound on the different estates will be of interest to you. On the Lawrence estate it was 7·13d per lb., against 7·14d for the previous season; on the Venture estate 7·17d per lb, against 7·24d; and on the Selegama estate 5·73d per lb, against 5·24d. The exchange for the year was almost the same as for the previous year, being 1s 4 7-32d, against 1s 4 3-16d, or only a difference of 1-32d. Our average price was of course affected to a certain extent by the unfortunate dispute in the tea trade. Like other companies we had an accumulation of invoices, and some of these had to be forced on the market, with the result that we lost halfpence to 1d per lb on them. One item that seems to call for attention in the accounts is that of capital expenditure. This amounts to £4,067 since the company was started, as foreshadowed in the prospectus, and the amount has been carefully laid out in cultivating and extending the estates. Only a very small portion of it has been spent on machinery. I think I am right in saying that the expenditure on capital account will be very largely reduced, if not almost nil, next year, nor do we think that anything but a very moderate expenditure will be required for extra machinery. This capital expenditure has been met to a certain extent out of moneys received from the sale of produce, the reserved shares having been kept in hand. The market being against issuing shares for the moment, the

company thought it better to borrow money from their agents than to force shares on an unwilling market. The agents are content to advance money in this way, provided that the company can give them the necessary security, and with that idea in view it will probably be necessary to create a second charge on the company's estates, which is to cover the capital outlay pending the issue of the reserved shares, and which will be cancelled as soon as that issue is made. As regards the cultivation of the estates, Mr. Stanley Ross will tell you what a high state of cultivation they are kept in, especially Lawrence and Venture, which are two of the leading estates in Ceylon.

As regards the acreage of the estates, you will see by the report that 500 acres of tea and 140 acres of cocoa are just coming into bearing, which will enable us to present a very much better report to you next year. The Wavina estate is also planted with 21,000 rubber trees, and coconuts to a considerable extent, though it will be some time before we shall derive much profit from that source. Turning to tea generally, every one present is no doubt very familiar with the Ceylon tea statistics, but I think it as well to call attention to the satisfactory figures for the last ten months ending October 31. The imports were 44.924,000 lb., against 42,094,000 lb. for 1898, 42.330,000 lb. for 1897, and 39,088,000 lb. for 1896, and the deliveries 43,638,000 lb,, against 40,865,000 lb. for 1898, 42,635,000 lb. for 1897, and 39,562, 00 lb. for 1896. The average price of last week's sales was rather under 8d gross, against 8¼d for the previous week, and 8¼d for the corresponding week in 1898. I have nothing more to say, but, with the assistance of Mr. Stanley Ross, I shall be very pleased to answer any questions any shareholder may wish to put, before putting the adoption of the report and accounts to the meeting. I now beg to move. "That the report of the directors and statement of accounts for the year ended June 30, 1899, now presented, be and are hereby approved and adopted."

The motion was seconded by Mr. GOW.

In reply to questions from one of the shareholders, Mr. STANLEY ROSS stated that there was no cinchona grown on the estates at all, it having been cut out before the company was formed. As regarded the coffee, that also had been abandoned on the only estate where it had ever been planted, viz , Venture. This resolution was then put to the meeting and carried unanimously.

The CHAIRMAN then proposed, "That a final dividend of 3 per cent (making 6 per cent for the year ended June 30th, 1899) on the paid-up Preference share capital of the company be and is hereby declared payable on and after this date."

This was seconded by Mr. W. GOW, and carried unanimously.

The next resolution was, "That a dividend of 2 per cent on the paid-up ordinary share capital of the company for the year ended June 30th be and is hereby declared payable on and after this date."

This was proposed by the CHAIRMAN, seconded by Mr. GOW, and carried unanimously.

On the proposal of Mr. W GOW, seconded by Mr. STANLEY ROSS, the retiring director, Sir Alfred Dent, K.C.M.G., was unanimously re-elected.

Mr. LOWE proposed, and Mr. HANSSEN, seconded the re-election of the auditors, Messrs. Singleton, Fabin & Co.

The motion was carried unanimously.

Mr LOWE proposed a vote of thanks to the Chairman, who in responding, said that he felt sure that they all join with him in giving a hearty vote of thanks to the manager, Mr. Stanley Ross and the staff in Ceylon.

Mr. STANLEY ROSS briefly returned thanks, and said that with 500 acres of tea and over 140 acres of cocoa coming into bearing, he had no doubt that they would be able to pay a much larger dividend next year.

This terminated the proceedings.—*H. and C. Mail,* Dec. 1.

A TRIP ON THE HAWKESBURY.

SYDNEY, Nov. 25.

One of the most enjoyable day excursions one can make from Sydney is a trip on the Hawkesbury River, a stream noted for its beauty, which Anthony Trollope declared

EXCELS THAT OF THE RHIN AND MISSISSIPPI,

and one day last week I went this trip. My view in visiting Richmond was with the object of inspecting the

HAWKESBURY AGRICULTURAL COLLEGE,

an institution founded by the Government for the training of those who are to till the soil. As this institution is one of the best, south of the line, if not in the world, a few words respecting it may be of interest. There, over a hundred students, some from other parts of the world, including a Jap, while one of the smartest in the College at present is a Frenchman from Noumea. Boarders are charged 10s a week, the inclusive charge for board and instruction being £25 a year, part of the agreement being that they help in the work of the farm three days a week. Those who live in the district pay £2 a year, with £5 for daily lunch. Each student is provided with a bed-room and takes his meals in the large dining hall. There is a fine gymnasium; and cricket, football and other games are indulged in: electric light is laid on and there are a laboratory and a lecture hall. The institution is under the charge of Mr. Valder, the principal, assisted by several masters; while each section on the large experimental farm is under the control of a practical man, not necessarily with scientific knowledge, who is assisted by the students who are first of all taught in the classroom and then are sent out into the field to gain practical knowledge. When I arrived at the College I found that Mr. Campbell, an agricultural inspector, was coming from Sydney with 40 or 50 boys, the agricultural class at the model school, the best public school in Sydney, and so I waited to go round with them. Soon after their arrival all sat down to a substantial lunch, all of which, with the exception of tea (which, in Australia, is brought on at every meal), was produced on the farm. Afterwards the principal took us round, first of all showing us the horses, and the various machinery, and the most up-to-date methods being taught the students. We saw the sheep, which were being herded, the poultry, bees, and then from there to the dairy, where each visitor was regaled with a glass of delicious milk. Here butter and cheese are made. The cows were a very nice lot of animals, while the pigs looked in good condition. It should be mentioned that the animals, &c., reared in t farm, are many of them sent to the mark and are sold as fast as they can be secure

while there is an equally ready sale for the dairy produce. In the cheese department each student is allowed a day for making a cheese, which is examined by an inspector and marked whether good or bad. The last place visited was the

FRUIT ORCHARD

where a large variety of fruit is grown, a good portion of the ground being under grapes. The fruit is preserved for the use of the College in winter. These are the principal things, which are taught in this institution, the benefit of which has already been felt in the Colony. Even in Australia the tendency is to over-populate the cities, and the Government are acting wisely in giving the younger generation the best instruction, so that they may go out to large tracts of country, which yet await cultivation, and be able by scientific methods to obtain better and quicker results than their forefathers, the pioneers in this country, did. On this farm, science is made to go hand in hand with nature, and the results obtained have not been reaped on a rich soil, but on land which no farmer would himself tackle. Visitors to the institution are always welcomed, and any one who intends starting in any branch of agriculture can obtain advice on the subject, and be told the best way of laying out the capital he has to spend.

I drove back to Richmond a quiet country town, shaded amid the trees, and caught the afternoon train to Sydney. Away in the distance one could see the Blue Mountains, but we travelled over gently undulating ground, through park like country till Paramatta, the oldest town in Australian with the old Government house, was reached. From here the suburbs begin and one was transposed in the short space of little over an hour from peaceful country scenes to the rush and bustle of city life.

LIBERIAN COFFEE ESTATES SALES.

On Dec. 13, at Messrs. Powell & Co's auction rooms in Singapore, there was held an auction of six important Liberian Coffee Estates in the Malay States, belonging to the Malay Peninsula Coffee Co., Ltd. and advertised in the *Ceylon Observer*. It is probably the most important offer of coffee estates that has ever been made in the Straits, as the estates are all well-known, and they are all more or less in bearing. There was a considerable attendance of people interested in coffee and property, and after explanation of the conditions of sales bidding was started for

Lot 1 at $1,000. It was sold for $3,600 to Mr. Tunnicliffe, Batu Kamuning Estate, Sungei Ujong, has 117 acres of coffee just coming into bearing, and has 1,435 acres of forest in reserve. Bidding commenced at $2,000 and went slowly to $5,000 and was knocked down to Mr. Jas. Millar.

Klang Lands Estate, Selangor, is of 1,341 acres of which 183 is Liberian coffee, about a third of it over four years old. There are also para rubber trees and a large nursery. The bidding for this Estate commenced at $5,000 and rose to $11,200 to Mr. W. Smith.

Welds Hill was started at $10,000 and went to $16,500 to Mr. Edlin.

Weld's Hill Estate, just outside Kuala Lumpor, is the well known old estate, with coffee varying from 17 years, and para rubber, some two years, and some ten years old.

Eveleen Estate, also near Kuala Lumpor, is 99 acres in area. The coffee is from 4 to 5 years old, and there are a number of fruit trees.

Linsum and Silian, in Sungei Ujong, are also well-known having been under cultivation twenty years. The area is 1,697 acres; coffee in bearing covers 419 acres, and there are also pepper, sago, coconuts and 100 para rubber trees in full bearing. Bidding for Linsum and Silian Estate commenced at $15,000 and closed at $25,500 to Mr. R J Gunn.

Kamuning Estate is in Perak and contains 5,973 acres, part of it being subleased for mining purposes. There are manager's quarters, live stock, &c. This estate was sold to Mr. T Scott for $40,000.

BULKING TEAS IN INDIA.—It appears that in India it would be on the whole advisable if more teas were bulked on the spot instead of in London. In Ceylon factory-bulking has also been urged, but has been met with the response that very often bulking has had to be done over again when the packages arrived in London. The remedy would seem easy enough, but, perhaps, it will be well to peruse some Indian advice on the subject. The *Planters' Gazette* writes as follows:—"Not only are better prices realised as a rule of teas that have been bulked in India, but loss of weight is very considerably avoided. Planters are aware that tea properly packed will gain, instead of lose, in value, if kept in its original package untouched, while it soon loses in flavour if it is disturbed by being turned out and re-packed. The reason why small concerns, belonging, it may be, to private proprietors who sell in Calcutta, do not bulk, is because, if they waited for sufficient tea for a large break, the quality would be likely to suffer to a degree that would nullify any benefit to be derived from bulking. The interest of the proprietor of a small garden is concerned more in offering a tea with all its aroma and fragrance at perfection in Calcutta, than in considering how his tea will keep in England, after bulking in the London warehouses. The necessity for the gardens in India bulking their teas in their own factories, is becoming more and more imperative, owing to the very large quantities that have to be sampled and tasted. The work of tasting for the sales alone has grown so much that the powers of the buyers have been heavily strained to keep pace with it. Human nature cannot do impossibilities, so unless the teas are bulked, and the size of the breaks materially increased, there will very soon come a time when the buyers will be quite unable to look at the whole of the samples, much less to taste them."

PARIS, THE CINEMATOGRAPH AND CEYLON TEA.—In our issue of the 21st October last we put forward the suggestion that the cinematograph might well, with advantage, be employed for advertising Indian tea. That lectures illustrated with "living panoramic pictures" of every operation connected with tea, from the very first start—the clearing of the heavy forest jungle or grass-land—to the time it is sold over the counter; or, in fact, drunk at the breakfast or "afternoon tea" table, would take immensely with middle classes and the proletariat, and prove one of the very best methods of advertising our teas we could possibly adopt. We are glad to note that our Ceylon brethren have promptly taken up the idea, and that the necessary steps are being taken for the representation of such views (representing *Ceylon* tea), as we suggested, at the Paris Exhibition. The Thirty Committee has, in adopting our suggestion, proved itself far more go-ahead than our Indian Tea Association in this city, which has made no move in the matter.—*Indian Planters' Gazette*, Dec. 9.

Correspondence.

To the Editor.

IRRIGATION IN CEYLON AND INDIA.

Colombo, Dec. 8.

Dear Sir,—As one who has for many years been connected with irrigation matters in Ceylon and had opportunities both of visiting a few of the big works in India, and of becoming familiar with a good deal of literature on the subject, I would ask for room in your columns to add the results of my experience. In the first place, I would notice the recent local references to the returns from Indian works and point out not only that the figures quoted refer to a limited number of works, but further that no satisfactory comparison can be made as regards results of irrigation between Ceylon and India as our revenue and land systems are so radically different. In Ceylon all the land is considered *private* property and is now, where irrigation is provided by Government, only liable to a water rate of R1 per acre; but Government has no claim on any share of the produce or of the increase due to improved irrigation.

In India, on the other hand, the land is all owned by *the State* and the occupier is a tenant (or at most a lessee) paying a *rent.* This is generally "settled" periodically (except in Bengal) and ordinarily considered as the equivalent to the value of half the *net* crop; but, as laid down in the "Directions for Settlement" "under Indian Governments there is practically no other limit to the demand upon the land than the power of Government to enforce payment and the ability of the people to pay," I quote further as follows:—"The principle which now obtains is that the State determines the land tax from time to time retaining power to advance it upon fresh land rendered irrigable by national works. ....In Madras especially, this has proved an additional source of income to the State which can be fairly credited to irrigation accounts." By this means the principle of a single tax is maintained and it is largely by taking credit for this increased land revenue that the Indian works can be considered as remunerative. But there are other considerations which help forward this view, for instance, "Prior to 1854 all irrigation works were constituted under a military board by military engineers and paid *from out of revenue.* It is difficult if not impossible to ascertain the exact outlay upon particular schemes or indeed upon the whole of them up to that time." So this outlay is excluded from consideration.

Again in Madras there were ancient native and British works which were utilised, to which "additions have been made at a very moderate cost, but the revenue produced cannot properly be compared with their recorded cost as they are very largely the result of the labour of years antecedent to British rule which cannot be estimated." (Strachey's famine and P.W. of India.)

Further no account is in this connection taken of the system of State advances made to tenants for the purpose of permanent improvements to their holdings under the Land Improvement Acts, in which the "first place is given to wells, tanks and other works for storage, supply and distribution of water." Under this, a land-holder can borrow to the extent of 75 per cent. of the value of his land on easy terms of interest and repayment extending in some cases over 40 years and up to a limit of R10,000. Under this system there is *annually* advanced a sum of R200,000 in *each* of the Presidencies of Madras and Bombay—of which no notice is taken in the Irrigation Department.

Again there has been a large outlay in famine relief works which, I believe, finds no place in the ordinary irrigation accounts. With these preliminary remarks I pass to an examination of the last report of the Irrigation Branch of the P. W. Department of Madras (for the year ending 30th June, 1898, but published in 1899), and add some information to the figures put forward in the newspapers, so far as they refer to this Presidency.

I find the results stated as follows:—

(*a*) The net *revenue to the State on capital outlay* (*not return* as apparently stated in the papers quoted at a recent meeting) amounted to 7·88 p.c. on *ten major* (*productive and protective*) *works*—irrigating 2¾ million of acres.

(*b*) But this is *exclusive* of the "Interest charges" amounting to over 26½ lacs, and which reduces the net *return to the State* to 4 p.c.

(*c*) Further out of these 10 works, four instead of yielding any surplus show a deficiency of about 20 lacs on current outlay. While those which pay handsomely and make up for this deficiency are the Cauvery, Godavery and Khristna delta systems. When there were old native or early British works, the capital outlay on what is unknown; and as it cannot be taken into account a deduction is made of a portion of the revenue "*assumed* to be due to old irrigation less old maintenance charges" so as to arrive at the net revenue, which it is claimed is due to the extensions and additions made under the capital expenditure shown.

(*d*) Other 25 "minor works for which capital and revenue accounts are kept," (irrigating 535,000 acres) yielded a revenue of R16,59,000, of which "old irrigation" is credited with over nine lacs, leaving 7½ lacs as surplus revenue due to outlay of Government capital. (Under this class the capital outlay on the Buckingham canal is shown at 89 lacs, though it cost the Government £2½ millions sterling to buy out the original Company.) No "interest charges" are shown under this head, and the percentage of net revenue, due to outlay of Government capital, is put at 4·44.

(*e*) The two foregoing classes account for about 3½ millions of acres, but there remain another three millions of acres served by "minor works for which neither "capital nor revenue accounts are kept P.W.D." and minor works revenue department," in which there was an expenditure during the year of over 19 lacs as against a gross revenue of 83 lacs, but it is not stated if this surplus represents any return on the original outlay on the works.

(*f*) Finally, under head of Agricultural Work, there was an outlay of R587,922 against a return of R42,185.

I have not at present access to the official reports of recent years, relating to other parts of India, and in their absence must fall back on some other sources of information, though they are not quite up to date. I find these in Mr. Deakin's Indian Irrigation (a work published about five years ago), and who wrote as follows:—"Neither in Bombay or Bengal does irrigation pay the state; but major works pay 5 per cent in Panjab, 12 per cent. in Sind, and 7 per cent. in Madras." As this last figure is very slightly

under the latest report, we may fairly infer the rest of the figures may be accepted as probably still correct for the rest of India.

In view of these figures and my general acquaintance with the subject, I am unable with due humility to give my submission to the statement that "Irrigation in India pays handsomely." That a few special selected works or class of work are made to do so, is I dare say, not to be gainsaid, but the general proposition is open to doubt. I will in a further letter discuss the Ceylon figures and will stop here for today, but I trust that I have advanced sufficient to show that there are such differences between India and Ceylon that it is not possible to make a suitable comparison between the two; especially because the figures published take account of sources of profit not available in this island, and omit sundry branches of expenditure, which are included in the returns published in Ceylon, as I will show in my next letter.

Meanwhile I would only add that there is one broad ground common to the policies of both the Indian and Ceylon Government as set out by the author already quoted in the following words:—"The gigantic works undertaken by the Indian Government and those on a smaller scale in Ceylon were not a speculation in beneficence, but forced on by the terrible famines which periodically visit portions of this great territory. * * * It pays the Hindu everywhere, for without it, millions would not live at all and millions would be decimated by famine every few years. Reckoning its influence upon the railway commerce and good Government of India its value is inestimable."

In view of these remarks, which are on a smaller scale appplicable to this island, one is almost inclined to enquire why any immediate and direct return for irrigation is required and why Government should not be content with the indirect benefits and returns which admittedly follow,—Yours faithfully,

E. ELLIOTT.

ANALYSES OF SAMPLES OF COCOA.

Kandy, Dec. 12.

SIR,—I herein enclose copy of Mr. Hughes' Report on samples of cocoa analysed by him in terms of recommendation made by the Cocoa Committee, that analyses should be made of the principal brands of cacao in order to ascertain if any adulteration exists, which might prejudice the interests of Cacao Planters.

The Report is a valuable one and will doubtless be perused with much interest.—Yours faithfully, A. PHILIP,
Secretary, Ceylon Planters' Association.

Analytical Laboratory, 79 Mark Lane, London, E.C.,
November 9th, 1899.

W. M. Leake, Esq., Ceylon Association in London, 61 and 62 Gracechurch Street, E.C.

Dear Sir,—I have now the pleasure of sending you the results of my analyses of the nine samples of Cocoa sent me respectively on the 12th and 18th October. According to your letter of the former date samples marked:

				s.	d.
Cadbury's	..	9½ ozs.	for	1	4½
Army and Navy	..	8	do	1	3
Van Houten	..	8	do	1	6
Taylor's Condensed	..	8	do	1	5
Fry's Extract	..	6	do		9½
Vi-Cocoa	..	8	do	1	4½

were purchased at the Army and Navy Co-operative Association at the prices above named.

				s.	d.
Samples	Suchard's	8 ozs.	for	1	4½
„	Rowntree's	8	do	1	4½
„	Epp's Homeopathic	8	do		7

were purchased at the Civil Service Stores.

The analyses have been carried out fully according to your instructions, the results being in sufficient in detail to determine to what extent adulteration and admixture with other ingredients prevailed

I have added a few remarks which the results suggested and I trust the analyses will be of practical use both to producers and consumers of Cocoa.

Believe me, yours faithfully,
JOHN HUGHES.

ANALYSES OF SAMPLES OF COCOA.

Purchased respectively at the Army and Navy Co-operative Society, Limited, and the Civil Service Supply Association. By Mr. W. M. Leake, Secretary to the Ceylon Association in London:—

TABLE I.

SAMPLES OF COCOA ESSENCE consisting of pure cocoa from which about two-thirds of the original fat has been removed:—

	No. 1. Cadbury's.	No. 2. Fry's.	No. 3. Army and Navy.
	s. d.	s. d.	s. d.
Price per lb. ..	2 4	2 1	2 6
Water (lost at 212° F.) ..	3·99	4·30	3·10
Fat (Cocoa butter) ..	25·01	30·70	37·20
*Albuminoids and Theobromine ..	22·15	20·38	17·53
Mucilage Gum &c. ...	9·70	10·64	7·73
Glucose and Dextrine ..	4·10	1·36	5·47
Natural Starch and Digestible Fibre ..	25·91	23·76	19·04
Indigestible Fibre (Cellulose) ..	4·13	4·46	4·03
†Ash or Mineral matter ...	5·06	4·40	5·90
	100·00	100·00	100·00
Melting point of Fat ...	84° F	85° F	83° F
*Containing Nitrogen ..	3·50	3·22	2·77
†Containing Potash ..	1·66	1·56	1·50

Mechanical Condition: Fineness and state of granulation:—

Powder passed through sieve having 10,000 holes to the square inch.	72·59	81·78	76·44
Residue left on Sieve	27·41	18·22	23·56
	100·00	1000·00	100·00

TABLE II.

SAMPLES OF COCOA ESSENCE consisting of Cocoa from which about two-thirds of the original fat has been removed and some potash salts added.

	No. 4. Van-Houton's.	No. 5. Suchard's	No. 6. Rowntree's.	No. 7. Taylor's.
Price per lb.	3s.	2s 9d.	2s 9d	2s 10d.
Water (lost @ 212° F) ..	2·94	5·04	3·82	5·12
Fat (Cocoa Butter) ..	30·10	33·40	32·50	31·70
*Albuminoids and Theobromine ..	21·64	20·00	19·30	18·23
Mucilage, Gum, &c. ..	10·03	8·25	9·04	10·05
Glucose and Dextrine ..	·97	1·75	1·76	2·15
Natural Starch and Digestible Fibre ..	21·44	19·47	21·83	21·29
Indigestible Fibre (Cellulose) ..	4·26	4·93	3·83	4·26
†Ash or Mineral Matter ..	8·62	7·16	7·92	7·20
	100·00	100·00	100·00	100·00
Melting point of Fat ..	84°F	82°F	85°F	84°F
*Containing Nitrogen ..	3·42	3·16	3·05	2·88
†Containing Potash ..	4·49	3·35	4·24	3·41
Mechanical condition, Fineness and state of granulation :—				
Powder passed through sieve having 10,000 holes to the square inch	57·05	81·04	62·51	95·10
Residue left on sieve ..	42·95	18·96	37·49	4·90
	100·00	100·00	100·00	100·00

TABLE III.

SAMPLES OF COCOA mixed with other materials.

	No. 8 Tibble's.	No. 9 Epp's.
	s. d.	s d.
Price per lb.	2 9	1 2
Water (lost at 212° F)	5·04	4·58
Fat (Cocoa Butter)	27·10	26·40
*Albuminoids and Theobromine	17·53	7·27
Mucilage, Gum, &c.	11·86	11·82
Sugar, Glucose and Dextrine	2·34	18·58
Starch and Digestible Fibre	24·30	28·45
Indigestible Fibre (Cellucose)	5·33	1·40
†Ash or Mineral Matter	6·50	1·50
	100·00	100·00
Melting point of fat	80° F	83° F
*Containing Nitrogen	2 77	1 15
†Containing Potash	2·68	·54
Mechanical condition, fineness and state of granulation :—		
Powder passed through sieve having 10,000 holes to the square inch	76·35	42·74
Residue left on sieve	23·65	57·26
	100·00	100·00

REMARKS.

From the above results it will be seen that in Table I., the chief variation in quality depends upon the amount of fat removed from the original cocoa, Cadbury's containing only 25·01 per cent while the sample of the Army and Navy Stores contained as much as 37·20 of fat.

Pure cocoa contains originally from 50 to 52 per cent of fat and from 2·20 to 2·35 per cent of Nitrogen.

The removal of the fat renders the essence or residue richer in Nitrogen and in the other constituents of cocoa.

How far the removal of the fat should be carried of naturally an important point to be considered with is view of rendering the material digestible and palatable.

Doubtless some person will prefer cocoa rich in fat while other persons will prefer a quality from which more of the fat has been removed, consequently the selection must be a personal matter.

In Table II., the samples consist of cocoa with a slight addition of potash salts. Why potash salts should have been added is not quite apparent, as the quantity present cannot very materially affect the solubility of the cocoa, though possibly the digestibility may be somewhat improved thereby.

The figures show that there is not very much variation in the general composition of the four samples.

Table III., represents the composition of two well known mixtures consisting of cocoa and other materials.

No. 8. Dr. Tibble's Vi-cocoa contains 27·10 per cent of fat and 2·77 per cent of Nitrogen. Microscopical examination shows that the bulk of the material consists of cocoa to which small quantities of ground kola nut, malt and hops have been added.

Whatever may be claimed for it as "a restorative and stimulating food" by the makers the actual figures brought out in the analysis indicate that there is less nitrogen and more indigestible fibre than exists in well known brands of pure cocoa.

No. 9. The last of these samples contains very much less original cocoa than any of the others. The figures for fat name 26·40 per cent are very similar to those found in the previous samples, but the exceptionally low figures for Nitrogen 1·15 at once indicate that other materials must be present in the mixture.

On making a microscopical examination it is seen that considerable quantities of arrowroot and coarsely crushed white sugar are present.

Probably one-half of the mixture consists of pure cocoa with the whole of its original fat left in, whilst the other half consists of the above named ingredients.

MECHANICAL CONDITION.

The figures given under the heading of fineness and state of granulation represent the readiness with which the respective powders can be passed through a sieve having a mesh of 10,000 holes to the square inch.

GENERAL SOLUBILITY.

The claim so frequently set up by certain makers that their cocoas are soluble, cannot be in any way supported by practical tests.

From a number of experiments recently made it was clearly demonstrated that the actual amount of cocoa rendered soluble by the action of boiling water continued for half an hour in no case exceeded 30 per cent; so that it is most undesirable that manufacturers should continue to put forth claims of superiority on the grounds of solubility. Cocoa is mixible, but certainly not completely soluble in hot water.

JOHN HUGHES, F I C.,
Agricultural Analyst

Analytical Laboratory, 79 Mark Lane, London, E. C.
November 9th 1899.

THE COCONUT INDUSTRY AT TRINCOMALEE.

A correspondent writes:—"The coconut industry, which has been much neglected, is beginning to attract attention Mr. Lushington's estate at Nilaveli is fully planted and the plants grow very rapidly. The soil is supposed to be the best of its kind and in process of time will compare favourably with any estates in the Eastern or North-Western Provinces. The timber, that was cut on the land, is now being sold for firewood with some profit to the owner. Several other lands on a small scale have been bought from Government and are now being converted into coconut estates."

CINNAMON IN LONDON.

The information, which has come to hand by a recent mail, on the quarterly auction sale of cinnamon held in London on the 27th ultimo, helps materially to modify the impression created by the intelligence, by wire, which we published on the 28th, that spice of ordinary quality fetched the previous sale's rates. A not unreasonable deduction from that brief message would be that there was nothing to distinguish the sale in November from its predecessor of August; and that prices had remained practically unchanged. The fact is that the two sales were as different as possible in almost every particular. In August, the quantity offered (959 bales) was below the average, the offerings for August 1898 having been over 1,500 bales; last month, the offerings were far above the average, if they did not constitute quite a record. In August almost all the cinnamon offered was disposed of in the sale room; in November considerably less than one-third found buyers. In August the demand was brisk and the prices were even; but last month the tone of the market was dull, and the variation in prices was most marked. The determining factor was that the market was over-stocked, cinnamon as a luxury being specially sensitive to over-production; while that, again, was caused to a great extent by the inrush of wild and coarse bark. Both quantity and quality thus conspired to unsettle the market.

In discussing weather and crops, and in interpreting the Export Tables, we pointed out, from time to time, that the severe drought which prevailed in the lowcountry, during the first quarter of this year, followed as it was by unusual rainlessness in June-July, would tell on the export of cinnamon and of the products of the coconut palm. After the second drought we felt that it would not be possible to make good, before the end of the year, the shortage in quilled cinnamon, though the exports of chips, scraped from sticks that will not peel, might show an increase. Almost immediately after, exports of quilled bark kept going up by leaps and bounds, in a most unaccountable way, until the phenomenon was explained by the announcement that wild bark was being shipped in large quantities. The Collector of Customs insisted on having a separate heading for what is not the true cinnamon bark of commerce; but it is to be feared that, before official notice was taken of the new departure, and before the Chamber of Commerce sounded a note of warning, a great deal of the wild stuff was sent away as cinnamon, both in bales and bags. On no other ground can we explain the shipments of quilled bark aggregating 2,414,035 lb. till the 19th instant, and coming so close to the shipments for the corresponding period of last year, which were 2,400.796 lb. The immense growth in the exports of chips—1,748,317 lb., against 1,321,806 lb. in 1898, and 1,021,838 lb. in 1897, may be referred to the droughts which compelled the scraping of coarse bark which would not peel off—though not if all the quilled bark that was shipped was genuine stuff. There is reason to fear that in chips, as in bales, the exceptionally high figures are due to dishonest dealing, and the shipment of spurious bark.

We should be glad to know that the trade in other than cultivated bark received its quietus at the sale of three weeks ago. It certainly received no encouragement at the auctions; for nearly all of it had to be withdrawn. It is probable that, up to the middle of this year, genuine cinnamon was adulterated with wild and low bark, and that high prices and a short supply encouraged the dishonest fraternity to attempt a new stroke. Nothing can check dishonest trade so effectually as the demonstration that it does not pay; and we should greatly rejoice if the new columns in our export tables would disappear, as a result of the last cinnamon sales. It is satisfactory to find that the old marks of cinnamon and the fine qualities were all disposed of, and at prices which were highly satisfactory—the finest showing advance. Even "unworked" cinnamon held its own, so that it only wants the elimination of wild cinnamon, for the market to revert to a healthy state.

The following report from the leading firm we generally quote, is of special interest at the present time:—

9 King William Street, London, E.C., Nov. 28.

CINNAMON.—The last quarterly auctions of the year were held yesterday, when about 4,450 bales Ceylon growth offered against 959 bales in August and 3,901 bales at this period last year.

The selection was not a good one, a very large proportion of the extensive supply comprising wild and low bark, nearly all of which sorts had to be withdrawn as the trade did not bid for this poor stuff.

The tone of the sales was dull but as importers met the Market, about 1,200 bales were cleared in the room.

"Worked" quill was in small supply and all sold, the top grades of fine and good at generally firm prices, and the lower qualities mostly at 1d. per lb. decline. "Unworked" went irregularly, at full rates for the better grades and easier for the inferior, "Worked" Firsts good and fine sold at 1s. 5d. to 1s. 8d.; seconds, 1s. 4d. to 1s. 5d.; thirds 1s. 2d. to 1s. 5d.; fourths 8d. to 12½d, "Unworked," first, 8d. to 1s. 3d.; seconds 8d. to 1s, thirds 7d. to 11½d, and fourths 6d. to 9½d. per lb.

CHIPS, &c.—The enormous supply of about 4,550 bags offered; mostly wild and bark that were neglected, some 300 bags only finding buyers at about late rates; cuttings, &c., 4½d. to 9d; bark and chips 1½d. to 3d. per lb.

STOCKS CEYLON.—5,859 bales against 6,116 in 1898; 4384 in 1897 and 2,100 in 1896.

CHIPS.—6,705 bags against 1,920 in 1898; 4,096 in 1897 and 4062 in 1896.

The ss. "Duke of Norfolk" with a quantity of Cinnamon on board has not yet arrived.

The next auctions are fixed for 26th Feb. 1900.

THE GEOGRAPHY OF TEA.

This is the title of the paper on the above subject read at the International Geographical Congress, held in Berlin on Septembr 28th, by Mr. McEwan, F.R.G.S.—*Home and Colonial Mail*, Dec. 15.

PASSION FRUIT.

We are surprised to stumble upon some ignorant comments on an article on Passion Fruit, which appeared in our columns some weeks ago, in a paper which should know something above the subject. The *Fruit Grower* of November 30th has the following :—

It is notorious that we have to go from home to learn anything of ourselves. The Ceylon *Observer* in an article on passion fruit, tells us that "fairly successful" trial shipments of this fruit have been made from Australia to the London markets, "some of the samples being sold as high as 1s a dozen." We would like to have some particulars as to the "success" of these shipments. The *Observer* much more correctly sums up the situation with regard to passion fruit by saying that it is an excellent fruit for "local consumption."

In view of this extraordinary and ill-informed effusion we have been at the pains to refer to facts. Corroborating our statements, the following from the *Daily Telegraph* early this year and from the *Melbourne Leader* of March 3rd will be sufficient :—

Whatever may be done as regards oranges in New South Wales, it may be considered certain that an attempt will be made this season to send a good supply of passion fruit to the London market. This is a fruit in connection with which Australian growers need fear no rivalry. The obstacles to overcome are the ignorance of English people to the merits of the fruit, and the unaccountable prejudice some of the London fruit importers have against it. Why this prejudice should exist is a mystery, but that it does is evident from the published letters of Mr. F H Dangar. He was led to write owing to one firm going so far as to say that passion fruit had "no commercial value" in the London market, and he pointed out that this could only be from the fact that it was almost everywhere an untried novelty The main fact remained that it carried well, hardly a pod going wrong in a large consignment, and that by many buyers the fruit was pronounced delicious wherever sampled. The loss to exporters of passion fruit last year was occasioned chiefly by London agents not thinking it worth their while to make sales. Tho time will come when to be agent and salesman for Australian fruit in London will require more than a mere mechanical conveyance of the cases to a sales room and an offer there to the highest bidder.—*Daily Telegraph.*

Some time back a trial shipment of passion-fruit was sent from Pennant Hills, New South Wales to London. It was a failure, the account sales showing the disposal of thirteen cases each at one shilling per case. Some later consignments, however, fared better; and Mr. F H Dangar, of Sydney, who is now in a letter to Mr. C B Cairnes, of Parramatta, remarks :—"I am inclined to think that as the fruit was not known, the waste has been unnecessarily enlarged, and fruit rejected which was perhaps slightly shrivelled. Englishmen who used to stay with me in Sydney used to call it 'heavenly fruit,' and I am certain when this is better known higher prices will be obtained. I fear that but few Australians here knew of the shipment." Mr. Dangar mentions that when he went to England last year he took a case containing 20 dozen with him from Sydney. They were carried in the vessel's cool chamber, and when opened in London not more than six pods were found to be damaged. It seems pretty certain that a few more Australian consuls like Mr. Dangar would be invaluable to our growers (says the "Daily Telegraph"), and that it is simply absurd to ship fruit to British fruiterers who have never seen it before, and who condemn passion fruit as worthless because the skin is a little wrinkled. English business people aro the most conservative men on earth in many respects, and a small consignment of unknown fruit, with some shrivelled up, could not be recognised by them as the first fruits of a new and possibly great trade. The pity of it—for the Pennant Hills people—is that Mr. Dangar did not meet Mr. Cooper when the latter was selling fruit at a shilling a case, while Mr. Dangar was giving a *shilling a dozen for all he could get*, and thinking it would be ridiculously cheap. It is quite evident that great as was the failure of the first trial the passion fruit export trade has possibilities which are in some ways greater than that of oranges, if only for the fact that they will leave the market to themselves.—*Melbourne Leader*, March 3.

PRODUCE AND PLANTING.

THE TEA MARKET IN NOVEMBER.—"During November the offerings at public auctions of Indian teas were 220,000 packages, against 210,000 packages in the same month of 1898. Some inferiority in quality was apparent as compared with earlier arrivals," say Messrs. McMeekin and Co., in their report, "and this was most marked in the case of some of the Darjeeling teas. The strong tone and active market noticed during October continued till the middle of the month, but after that buyers showed some unwillingness to purchase, and a material decline in the value of all descriptions took place. The average price for the month was 8½d per lb, as against 8¼d per lb. for the corresponding month of last year. The imports were 20,471,000lb, and the deliveries 13,689,000lb, leaving in stock on November 30, 52,985,000lb. The present position of tea generally is in marked contrast of twelve months ago, when attention was pointedly called to the manner in which both the home and the export demand were running ahead of the importations. For the eleven months expired of the present calendar year, the imports from all sources shown in the figures of the Tea Brokers' Association have increased by 5,700,000 lb. while the total deliveries only show an increase of 1,600,000 lb. and the stock shows an increase of 3,270,000 lb. on that of Nov. 30, 1898. The period of higher prices for common grades, which set in early in 1899, appears to have checked the increase in the rate of home and foreign consumption, which had been proceeding previously in a most satisfactory manner. It is probable that during 1899, the total increase in shipments, as compared with 1898, of Indian and Ceylon teas to countries other than the United Kingdom (including re exports from there) will be about 4,000,000 lb. while the increase in home consumption may be comparatively small. The increased crop for the Indian season will probably exceed 12,000,000 lb. and Ceylon is likely to finish up with some 5,000,000 lb. of increased yield for 1899. There is, therefore, little fear of an inadequate supply unless there is a sudden large development in the demand. The regulation of the supplies printed in auction is working well from the buyers' point of view, and so long as large unoffered first-hand stocks remain in the warehouses, there can be little inducement to run the risks and incur the expenses of buying ahead of immediate requirements especially in a declining market. Of Ceylon tea the offerings were 98,000 packages, against 100,000 packages in the same month of 1898. The quality generally showed a falling off, and really fine liquoring teas were strongly competed for throughout the month."

THE NYASSALAND COFFEE CROP.—Advices from Blantyre say : "Seasonable rains have fallen in the Shire Highlands. The coffee crop amounts to 1,000 tons. It is expected that there will be an excellent crop next season, largely exceeding any in the past."

REMINDERS ARE NECESSARY.—The war absorbs so much space in the newspapers, that there is apparently no room for the insertion of the occasional paragraphs about the planters and tea planting, which at one time served to advertise Indian and Ceylon teas. It may be thought that the product of British enterprise is so popular with consumers that there is no fear of any decline in the demand. This is

so to a certain extent, but the public are fickle, and the more they see or hear about an article of produce, the more they feel disposed to take a practical interest in it. It may be noticed in this connection that one or two firms of wholesale and retail dealers, who do not make a speciality of Indian and Ceylon teas, have recently opened tea rooms in various parts of the country, where the sale of tea in the cup is combined with the sale of tea in packets. These rooms are tastefully decorated in Chinese or Japanese fashion, and ornaments from the Far East are also offered for sale. There is thus some inducement to the purchaser to try the teas of China and Japan. So long as this idea is limited in practice its effect on the Indian and Ceylon tea trade will be little or nothing. It is strange, however, that whereas shops for the sale of Chinese and Japanese articles as well as tea are not uncommon, especially at the more prominent seaside resorts, it is not often that Indian or Ceylon tea rooms are to be found. The native ware from our own possessions does not seem to possess the same charm for the British buyer, or else it is not pushed so freely as the competing article from the Far East. We have heard of a scheme for opening tea houses in London and elsewhere after the style of those in Japan. We are aware that in a feeble way some attempt has been made to establish tea rooms at which natives from India or Ceylon were employed. But the idea has not been supported, we believe, by capital to any considerable extent. It is not to be expected that capitalist unconnected with Indian and Ceylon tea will take risks that those who are interested decline, but it seems odd that if capital can be found for kindred ventures, an object which would serve a distinctly useful purpose, so far as British-grown tea is concerned, should be deemed impracticable. We are not amongst those who believe that the majority of tea drinkers care where the product is grown; value for money is the main consideration. But if a thing is talked about, advertised, and the interest in it maintained, the public are sure to demand it. That is why the need for advertisement in some form or other is particularly useful, and why there is constant necessity for reminding the public, lest they become indifferent on the subject that British-grown tea has the first claim on their attention for several reasons.

LAST WEEK'S TEA MARKET.—Teas "for price" continued in request, and were well taken at last week's rates, the lowest market quotation being still 6½d.—*Home and Colonial Mail*, Dec. 15.

COCOA IN LONDON.

Messrs. Hamel Smith & Co., East and West India merchants, report:—The demand for this article is very strong. Yesterday 20 bags of defective and very inferior were sold at 59s, and some thin and broken mixed with dust at 56s. A few weeks back such cocoa was unsaleable. Fine Ceylons would command fancy rates just now, but there are none offering. Some of the makers of cocoa and chocolate hope to have a good Christmas, as they expect the public will follow the Queen's example, and make chocolates their Christmas present.

It is expected that the Government will be buyers again next week, but if so I expect it will be mainly Guayaquils as at present there are only two sales advertised. No sales were held this week, the trade preferring to buy privately. Today's prices for Ceylon are:—56s to 59s for inferior and defective, 65s for ordinary, 68s to 76s for low middling to middling, and 87s for fine red; but prices are sure to go higher. The present stock is 6,390 bags, against 9,080 bags last year.

THE DETERIORATION OF GROUND NUTS.

The Madras Government, like the French Administration of Pondicherry, is, says the *Times of India*, addressing itself to the task of investigating the remarkable decline in the groundnut trade of the Presidency. The rapid decay of this industry has almost spelt ruin to Pondicherry, which, in addition to the great deficiency caused by the deterioration of the crop, has had to suffer the diversion of a considerable export trade to the neighbouring port of Cuddalore. The French Administration are seeking for a remedy in the direction of improving the quality of the seed, and certain superficial advantages have been obtained by the distribution of seed nuts from Mozambique and Mauritius. But although the deterioration of the seed is a factor in the decay of the industry, it is not the main one; bad farming is undoubtedly at the root of the evil. The Madras cultivator crops the same land with nuts year after year, removes all vegetation from the land, and neglects even to replenish the soil by means of fertilisers. That exhaustion of the land lies at the base of the depression is still further established by the circumstances that exotic seeds, after a year or two, suffer equally with the indigenous variety. On the suggestion of Dr. Leather, the Madras Department of Agriculture is arranging for a series of analyses to determine whether the local nut is as poor as it is commonly reputed to be. The information, no doubt, will be useful, but we should be glad to see some more practical measure in progress to conserve an industry which is well worth preserving. This is not a case of good groundnut oil being elbowed aside by inferior substitutes. The Marseilles soap boiling firms "await with impatience" the moment when groundnut oil shall again be procurable. It ought not to be beyond the powers of the Agriculural Department to direct the ryot to supply that demand.

SPRING VALLEY COFFEE COMPANY, LIMITED.

The following report was to be presented to the thirty-fifth ordinary general meeting of the Company held at No. 5, Dowgate Hill, London, on Thursday, the 21st December.

The crop of tea for the past season amounted to 396,800 lb., and this, together with 90,782 lb. bought from neighbouring estates and manufactured at Spring Valley, sold for £15,711 17s 10d, the average selling price being 7·73 pence against 8·24 pence obtained last year.

The crop from the few remaining coffee trees amounted to 234 cwts. 3 qrs. 8 lb., and realized £738 6s 1d, being at the rate of 62s 10d per cwt., against 96s 5d obtained for the 1897-1898 crop.

The total proceeds from the sales of produce amounted to £16,450 3s 11d, and expenditure in Ceylon and London to £14,314 13s 11d, leaving a profit on the year's working of £2,135 10s. To this, profit has to be added a sum of £363 6s 7d, brought forward from last year, and after debiting £26 10s for Income Tax and £900 for Dividend on the Preference Share capital to 31st July, 1899, there remains a balance of £1,572 6s 7d to be now dealt with.

The Directors recommend the payment of a Dividend of 1½ per cent on the Ordinary Capital, which will absorb £1,200 of the above sum, and that the balance of £372 6s 7d be carried forward to next year.

During the past year the sum of £3,522 11s 8d has been spent on Capital Account on the extension of the tea area and factory accommodation,

The Directors have to report that the severe drought and unfavourable weather referred to in the last annual report continued almost without intermission throughout the past season. The crop of tea has in consequence been most disappointing, the yield from the 1,217 acres in hearing having fallen to 326 lb. per acre, against 375 lb. and 440 lh. secured during the two preceding years respectively.

The climatic conditions which prevailed during the past year are not usual in the Badulla district, and, with a return to normal weather, former yields may be looked for with confidence.

The Tea Factory has been successfully completed, and the whole of our available area planted with tea and fuel, the latter ou steep faces unsuitable for tea.

With the large area of tea coming rapidly into bearing, and with the facilities for manufacture we now possess, it is expected that important savings in the cost of production will be effected in the future.

Our Manager is of opinion that estimates will be more easily framed and worked to, now that the property is converted into a tea garden, if the financial year were made to terminate on the 31st December in place of 31st July. Accounts for the five months ending on the 31st December next will therefore be presented to Shareholders early in 1900 in order to bring this into effect.

The area of the estate as on 31st July, 1899, was as follows:—

TEA.

5 years old and over		1045	acres.
Planted November/December..	1894	172	„
„	1895	145	„
„	1896	159	„
„	1897	194	„
„	1898	196	„
Total under Tea ..		1,911	„
Total under Fuel ...		163	„
Forest, &c. ..		257	„
Total Area ...		2,331	acres

Mr. J G Wardrop, a member of the Board, retires on this occasion, and, being eligible, offers himself for re-election. Messrs. Deloitte, Devor, Griffiths & Co., the Auditors, also offer themselves for re-election.

TEA CORPORATION, LTD. (OF CEYLON.

Report of the Directors, and Accounts for the year ending 30th June, 1899, submitted to the annual General Meeting of Shareholders on the 19th Dec.

The Directors beg to submit herewith the Accounts of the Corporation for the year ending 30th June, 1899, which, compared with those of the previous year, must be considered satisfactory.

It will be seen by the working accounts that the gross amount of Tea produced on the estates was 1,234,442 lbs. The cost f.o.b was 26·10 cents per lb., which is nearly 6 cents or 1d. per lb. less than it was during the previous year. The average price obtained was 6⅜d. gross and 5 15-16d. nett per lb., this also being a great improvement on 1897-98. To the profit on Tea is added that on Sundry Produce, amounting to £592 14s., thus making a total of £8,867 19s. to be carried to Profit and Loss Account.

This account shows a profit of £4,327 1s. 9d., after the deduction of London Expenses and debenture Interest, etc. From this must be further deducted the loss on last year, amounting to £1,620 6s., leaving a nett profit of £2,706 15s. 9d. as shown in the Balance Sheet.

A dividend on the Preference Shares up to the end of February, 1898, was paid on 1st August last.

It is proposed to write off £393 9s. 0d. from preliminary expenses, thus reducing that account to £1,300.

The results of the year, though bearing a favourable comparison with 1897-98 do not come up to expectation; this was mainly owing to a serious drought in the early part of this year, followed by long-continued rains. In view of these circumstances, it is satisfactory that an increased crop should have been obtained, and that at the same time an evident improvement in the quality of the Tea has been shown.

Mr. Tatham hopes to secure over 1,250,000 lb. of Tea for the current year at under 27 cents per lb., and about 300 cwts. of Cocoa, and in his last letter to the Board states as follows:—

"I have no doubt that I shall procure my estimate and also realise a better price for the Teas than I did last year, owing entirely to the manure, which has enabled me to pluck finer and still increase my yield."

At Doteloya alone there is a considerable acreage of land admirably suited to the growing of tea. Mr. Tatham strongly urges that this should be planted up, and Mr. E H Hancock, who has visited the property, thoroughly endorses this opinion. The Directors therefore recommend, subject to the approval of the Shareholders, that an additional amount of £20,000 debenture stock should be raised for the purpose of developing the Company's property. Your Directors would not require the whole amount at once, as the expenditure would be spread over the next three years; they would therefore only call up this additional stock as occasion required. It is proposed that the stock should in the first instance be offered to the present Shareholders at the price of 90 per £100 stock.

For some months past negotiations have been on foot for working the Plumbago on the Company's estates, but in consequence of information received by the Board from Mr. Tatham, as to the value of the vein which has recently been found, the Directors have thought it advisable not to lease the rights, on the terms already proposed, without placing the matter before the Shareholders.

Mr. E H Hancock, on his return from Ceylon, joined the Board in place of Mr. H A Hancock.

The Directors retiring in rotation, are Mr. E H Hancock and Mr. T J Lawrance, who, being eligible offer themselves for re-election.

The Auditors, Messrs. Broads, Paterson & Co., also retire and offer themselves for re-election.

CACAO CULTURE.

It may be true, as stated recently by an experienced London broker in the cacao trade, that the Ceylon product does not come into competition with that of Trinidad or, we suppose, with the cacao of Mexico, Nicaragua, Ecuador, &c. But it must be, nevertheless, a fact that increased production in these Western lands tends to affect the market, unless consumption keeps pace, more especially on the Continent of Europe. We have just been reading a Report on "Cacao Culture in Ecuador" (see elsewhere) which shows that production in that South American State has been increasing since 1836 and that the crop for 1899 is expected to be close on 600,000 cwt. or fifteen times the outturn of Ceylon! This, however, must either be a great exaggeration, or the quantity required for home consumption must be very large. Hitherto, judging by shipments, we have credited Ecuador and Peru with an outturn of 360,000 cwt. and a home consumption of about 90,000 cwt. There can be no doubt that Ecuador has a great deal of land, and the perfection of climate, for cacao culture; but fortunately for Ceylon,

the labour difficulty prevents any rapid extension of plantations in the 20,000 square miles of the coast provinces which are considered to be adapted to the cultivation.

Turning to another cacao-producing country —Mexico—we direct attention to the interesting letter (given on page 483) from an old Ceylon coffee planter, Mr. F. O. Darley, so long resident in the Knuckles district. Who would not hasten to Mexico if all Mr. Darley states be realisable; but how can our correspondent explain the failure of the group of hard-headed Ceylon men who visited Mexico in 1897 and 1898 to take up land or make investments? Surely they had information, such as is now offered to us, placed before them? And yet going to see the country and the plantations for themselves, they deliberately declined to make an investment And yet Mr. Darley tells us that a profit of £120 to £150 per hectare—*£50 to £60 per acre*—is to be got after an outlay of only £8 per acre for any one who will wait five years —the crops being equal to over 16 cwt. of cocoa per acre. This is, we fear, too sanguine an estimate to be at all reliable. Indeed, Mr. Darley's own figures of value of crop will scarcely allow the profit he names and surely 40 cents of a dollar (or say 10d) per lb is too high a price for Mexican cacao, being close on 90s a cwt? No doubt the United States supply a grand market for the produce of Mexico; but it must be under extremely favourable circumstances when even £50 worth of cacao per acre as the gross result is realized. So in the case of rubber; to secure £2,000 worth of rubber for an outlay of £1,600 spread over five years should be tempting enough to draw abundance of capital to Mexico; but, as we mentioned, the Ceylon visitors of 1897-8 did not see their way to recommend investments. At the same time, it may be said that if Mr. Darley's estimates are halved in their next result, they should be good enough. Sugar, it will be seen, is estimated to pay £36 an acre; and coffee is without disease. Mr. Darley must really tell us a little more about this "Paradise of the West." Let him give us his own experience—a plain unvarnished tale as a practical planter—since he first landed in Mexico. What about labour, taxes, police? Let us hear some of the drawbacks, and the reason why British and American capitalists have not long ago taken up all available land to grow products so much in request in the adjacent extensive markets of the United States.

THE SUGAR INDUSTRY.

We have received a copy of a Glasgow paper with information as to new sugar machinery prepared by a Clyde firm for the important Penang and Straits Sugar Companies, represented by the gentleman who is anxious to inspect North-Central and North-East Ceylon with reference to the location of a similar industry. It would be supposed that the further development of extensive operations in the Straits Settlements would be more than enough for the enterprise of Sir John Ramsden and his fellow-Directors and Agent; but apparently not, there being abundance of capital available for nay proposal recommended by their trusted Manager. Of course, the result of the required inspection has yet to be made manifest. But meantime we append the extract above referred to from our Glasgow contemporary; and it will be observed that Porto Rico is to receive new machinery from the Clyde, as well as the Straits Settlements:—

The well-known firm of sugar machinery engineers, Messrs. M'Onie, Harvey & Company (Limited), of this city, have just completed some specially heavy cane crushing machinery for the Penang Sugar Estates Company, of London and Penang, of which Sir John W. Ramsden, Bart., of Huddersfield, is the proprietor. The machinery consists of two sets of regrinding sugarcane mills, the rollers being 36 inches diameter by 72 inches long; these are fitted with steel shafts of great strength, having journals 17 inches diameter by 24 inches long, and are carried on side frames of extra strength, which have through side and main top bolts of heavy section of steel, the latter so arranged as to give the narrowest possible return plate. The returner is of the Rocker type, and consists of a deep beam of cast steel supported on strong brackets from the bottom of bedplate up through the side frames. The rollers run in heavy gunmetal bearings, which are cast hollow for the purpose of water circulation, thus assisting to keep the bearings cool, which is a consideration, owing to the great pressure now exerted by these large mills so as to extract all the juice out of the canes. The mills are fitted with strong, self-acting carriers for feeding the canes into the mill, also mechanical carriers for removing the crushed cane to the steam boilers. The mills are driven by powerful horizontal engines of the Corliss Frame pattern, having piston valves, the steam cylinders being 28 in. diameter by 48 in. stroke, are fitted with link reversing motion and sensitive high speed governor. The fly-wheels are extra heavy, and built in centre. arms, and segments for shipment abroad. These engines transmit their power through strong double gearing to the mill; all the spur pinions of this gearing and the large pinions on the roller shafts are made of the best Siemens' cast steel; the main and intermediate spur-wheels are built, and the segments of these wheels are also of cast steel; the shafts of these wheels are of best forged steel and large proportions, suitable for the work required. The whole as erected in the works has a very fine appearance, and has just been inspected by Sir John Ramsden, Bart, and Mr. Underdown, Q.C., of London, along with Mr. Arnold, the secretary, and Mr. Turner, the company's administrator in Penang.

Messrs. M'Onie, Harvey & Co. (Limited) have also in progress another powerful plant, the first of several to be erected for the Straits Sugar Company (Limited), of London, in which the same gentlemen are interested, consisting of engine, mill, and gearing, being duplicates in all respects of these already described, but this plant is for the manufacture of what is called in the Straits "basket sugar," or Muscovado; but in place of the usual copper wall used generally in the manufacture of this quality of sugar Mr. Turner intends using a Harvey triple effet evaporator, which will be a saving in fuel and labour, as well as improved recovery in the sugar obtained. After the syrup is brought to a high density it is treated in a special manner by a patent process of Mr. Miller, the chemist of the above company in Penang. By the Miller process the syrup is kept at a low temperature, so that there is no danger of its being charred, as sometimes occurs in the usual copper wall. Thus all the water is taken out of the syrup at a low temperature, and is then run into another

vessel, where it is kept in motion until it granulates into a solid mass of raw sugar, and is used in this state by the natives in the East or sold to refiners and brewers.

The advantages claimed for this process are that no molasses are produced, that the sugar will give a high recovery, and with the low temperature at which the juice is treated in the triple effet and in Miller's patent granulators there will be less loss from inversion, as compared with the present system of making Muscovado sugar on the copper wall with open evaporation. Also the process is simple, as no vacuum pans nor centrifugals are required.

The late hurricane in Porto Rico caused great damage to all the sugar estates in that island, and a number of the estates were levelled to the ground. Three of these damaged estates are now being amalgamated to make a central sugar factory, and the work has been entrusted to Messrs. M'Onie, Harvey and Company, (Limited). The success of this new venture may induce other planters to do likewise.

A DAY'S WORK ON A CEYLON TEA ESTATE.

"Master, Wake! Master, Wake!" This combined with a tremendous banging, announced that another day's work was beginning and that my worthy appu (cook) was endeavouring to awake me to a sense of my many duties. Having eaten early breakfast, or rather confined myself to a slice of pineapple, as eating anything at that hour —5-30—is always to me impossible, and walked to the factory (the place where the green tea leaf is converted into the saleable article) about 200 yards from my bungalow, I found most of the coolies already assembled, and others being hurried along by the kanganis (native overseers) to the mustering ground. The first thing on these occasions is to make oneself heard, and having succeeded, with the help of the conductor (the head native overseer, usually English speaking), in this, the next thing is to tell off the different gangs to their various works. This is frequently a work of extreme difficulty, as the coolies often like some work very much better than others, and the way they can slip from one gang to another without being seen is wonderful. And then there are the ladies to contend against little kutties (native girls) of most innocent appearance, swearing hat their feet are full of thorns and that they cannot work today, or that their great uncle died in the night and they must have three days' mourning with unlimited rice that he may be properly buried so that the various devils cannot get at him.

NATIVE FUNERALS ARE IN THIS COUNTRY made an occasion of great feasting, generally ending in all parties getting very drunk and indulging in a free fight, thus paving the way for another funeral. However, after a great deal of shouting and an occasional mild use of the stick, though this is to be deprecated, all are got into working order and marched off to various parts of the estate in charge of their respective kanganies. Then there is time to light the first pipe of the day and try to remember how many mistakes you have made at the muster in sending large gangs of coolies to works that only require a few, and *vice versa*.

This train of thought leads on to another, in which the likelihood of the manager's liver being slightly out of order, and the probable consequences when he comes on his morning's round to the various works, form a leading part,

THE MANAGER'S LIVER, especially if he happens, to be an elderly gentleman who has spent some years in the East, is always a matter of considerable interest to assistants on tea estates. But there is not much time to waste, and as a gang of men are pruning a field near, we just visit them. This is rather skilled labour, and the best coolies are usually selected for it, as a great deal depends on a field being properly pruned. Each man has his line of tea bushes, and they are cut down to about 18in. above the ground. Great care must be taken to make the coolies cut the branches off so that when the bush is pruned the tops of the cut branches form a level surface, and all cross branches and small twigs are or should be taken off. Half the coolies come to us and say that their knives are useless, or their hands are hurt, and the other half are usually doing very bad work: so that we may count on a lively half hour with these gentlemen. Their excuses are wonderful and manifold. It is here that an intimate knowledge of the Tamil language is so useful, as when the first coolie comes up with some stupid complaint, and you are able to draw comparisons in proper coolie Tamil between the man addressing you and one who is useless, it serves to deter the rest to a great extent. Of course, there are often real cases where a man cannot do the work, and if so he is sent to the pluckers in the next field.

Having looked carefully over the pruning, and informed any coolie doing bad work of your opinion of himself, his father, mother, sisters, brothers, and ancestors generally, and threatened the most awful penalties if he does not mend his ways, we proceed to the next field, where the pluckers are engaged. Here is the main body of the coolies, mostly women and boys and girls who are not strong enough to do other works, but are usually far quicker and handier than men at plucking. They all have baskets on their shoulders, into which they put the leaf. Only the young shoots are taken, and all coarse leaf must be left alone.

THE KANGANIS ARE SUPPOSED TO GO constantly round to see that the baskets contain nothing but good leaf, and woe betide the unfortu- nate assistant if the manager receives a note from tea maker (the man in charge of the factory, usually a more or less educated native) to say that the day's leaf is unsatisfactory. We stay some time with these coolies, as the work has to be carefully looked after, and so we go up and down the line of pluckers, and soon, on looking into the baskets, find several faults. Some coolies are

MISSING GOOD LEAF that is, leaving a bush before they have taken all the young and good leaf from it, or putting big, coarse leaves, which have the effect of giving the made tea a rank, bitter taste, into the baskets. It is a most important thing to see that all the flush (young leaf) is taken, as if there is any left it stops the young shoots sprouting, and instead there is only big, coarse the tea maker leaf where, if previously the bush had been properly treated, there would be young stuff fit for the tea factory. A field takes from ten days to three weeks between pluckings, depending on the weather and caste of tea. The young shoots are very sensitive to climate, and too much dry or wet weather is quite enough to stop the flush coming on. I am talking, of course, of Ceylon only; it may be different in Assam.

Having lectured the kanganies and looked over the trees already plucked, and probably indulged in a little chaff at the expense of erring coolies, we proceed round the estate. About this time the manager usually makes his appearance on his morning's round before going to the office, and if there is anything wrong it is as well to draw a veil over the meeting between the senior and junior superintendents, more especially if the aforesaid manager has had a late night with some friends, and is possessed of a head, liver, &c. Coolies clearing up roads and drains—the latter most important in a mountainous country like Ceylon, where the rainfall is heavy and wash therefore very great—are seen, too, on our way to the next work, where a gang of men are making a nursery for some seed. This is done by making beds of earth about 6in. high and putting very fine soil on the top. A fence must be put round if there is jungle near, or deer, pig, &c., will make short work of the young plants as they are coming up. On our way back to the pluckers we take the opportunity to see if the weeds are being kept down. This is done usually by giving the kanganis contracts about the estate of from ten to thirty acres, at about one rupee per acre: they are then entirely responsible for that piece of land as regards weeds and if many are found there they are liable to be fined; but, as they generally manage to make money out of the weeding, it does not as a rule give much trouble.

It is now 10-30 a.m., and time to weigh up the pluckers for the morning leaf. The conductor produces pocket scales and a kangani's name is called out. We open the

PLUCKING BOOK,

and find in it written the names of all the coolies belonging to his gang, as each kangani, before being taken on by the estate, has to bring so many coolies, for which he is paid what is called head money, at about 4 cents per day for every coolie that is working in his gang. On the coolie's name being called he or she steps out, and the conductor weighs her basket and tells us how many pounds of leaf she has plucked this morning, which is put against her name. All the coolies of that kangani's gang having been weighed, we pass on to the next gang, and so on until it is finished, and the leaf, put in sacks, is carried to the factory by boys. The weighing up finished, we go to breakfast, and have two hours spell before tackling the afternoon's labours, which are much the same as the morning's, and about 4 p.m. a coolie blows a horn and we go to evening muster, when all the coolies' names are taken down who have worked through the day and the pluckers' leaf weighed up a second time. If the work of anyone is unsatisfactoy, it is usual to give the offending party what is called half name, that is, make a mark in the name book (commonly known as the check roll) against that coolie, to signify that he is only to get half pay for the day's work. Very young assistants, and sometimes older ones too, are often much too apt to do this for trifling faults; it should be only done when the offender really deserves it or otherwise it only tends to dishearten coolies and make them careless.

Having despatched the

LEAF SACKS TO THE FACTORY

and given any sick person medicine, and listened to any of the kanganis' complaints, as they generally choose this time in the day to ventilate their grievances, we retrace our steps to the bungalow, and, if there is a court near, play tennis, or cricket practice perhaps claims us. In some districts there are a number of things to do in the way of sport, cricket, football (both Rugby and Association), and hockey being played regularly, and as there are always plenty of young men of the right sort, public school or 'Varsity many of them, there is no difficulty in getting good teams together. Some of the pleasantest days I have ever had have been when playing for my district against neighbouring ones.

The salary of an assistant superintendent is small, about 125·00 rupees, or £8, per month, but living is not expensive and this with perhaps a little help from home, should be enough, as an assistant is not expected to entertain, and he will find the subscriptions, &c., to the various sports he may go in for very small. The life, if a little monotonous, is, nevertheless, a very jolly one, as you are always out of doors, and. as most of the tea estates are in the hills, the climate is usually very good; in fact, where I am, at an elevation of about 5,000ft., it is almost perfection, and fires are very often required in the evening.

A young gentleman of good family, more especially if he is a public school man, will have a very good time, as he will find plenty of good fellows round him if he goes to a big planting district, such as Dimbula or Dikoya. After he has served his time of probation, known in the island as creeperdom which is very often the hardest time he will have, and gets an assistant's billet, he will find the life on the whole a good one, though, without influence of some sort, it is not very easy to get on quickly, and for some time, he will require help from home as regards money matters.

—*Field*, Dec. 9. PLANTER.

THE CEYLON TEA CROP IN 1899.

THE total exports for 1899 (according to the Chamber of Commerce figures) show a greater jump forward than for any of the past four years. The increase over 1898 is more than 10 million lb., and we have to go back to 1895-6 for a similar ratio of advance. We need scarcely say, too, that the outturn is decidedly in advance of the estimate of the Planters' Association as framed in the early part of 1899, and confirmed in September last. The comparison between estimates and results may be seen from the following:—

ESTIMATE.

	lb.
P. A. Estimate of Total Crop (1899) ..	126,500,000
Local Consumption ...	1,500,000
Total shipments ...	125,000,000
of which to United Kingdom ..	93,000,000
Leaving for other Countries ..	32,000,000

ACTUAL RESULT.

	lb.
Total Export 1899 (Chamber of Commerce)	129,894,156
To United Kingdom ...	103,948,124
Other Countries ..	25,946,032
For 1898 Total ..	119,769,071
To United Kingdom ..	96,133,833
Other Countries ...	23,635,238
Increase to other Countries ...	2,310,794

It will be observed that the United Kingdom got well-nigh 11 million lb, more tea than

was estimated, while the shipments to "other countries" did not reach anticipations by 6 million lb. "Thank heaven for the London market" being able to take off so much, one is inclined to say, in the face of such figures. Of course, if by increasing the offerings in the Colombo market, more tea could be diverted to "other countries," and especially to Russia, not a day should be lost on the part of proprietors or their agents—where free to make the change—in supporting "Colombo" and testing the statement that such tea would be bought at profitable rates for direct shipment. Meantime, it is of interest to note the distribution, and comparison between the two years, for "other countries." In the first place it is difficult to understand how the P. A. Committee came to estimate less for 1899 to the United Kingdom than was actually delivered in 1898; and in the second place, the total to other countries only showing an advance of 2,310,780 lb. is distinctly disappointing. From the details given by the Chamber, it will be seen that there has been a comparative decrease to Austria, France, Germany, Spain "India" (for Persian Gulf, etc.) and Africa; while to America and Australia the increase is by no means equal to expectations. To Russia the direct shipments compare as follows:—

1899	... ..	3,949,740 lb.
1898	... ..	2,714,003 ,,
Increase	.. ..	1,235,737 lb.

It is said that if a larger quantity of tea had been sold in Colombo, more would have gone to Russia; but it must be remembered that 37½ million lb. were offered in Colombo in 1899, of which only 31 million were sold; and as shown, only 26 million sent to other countries than the United Kingdom. Let us hope that 1900 may show a much better result, more especially in regard to America and the Continent of Europe. The Chamber's comparison is as follows:—

EXPORTS OF CEYLON TEA TO OTHER COUNTRIES,

January 1st to December 31st, 1899.

	1869. lb.	1898. lb.	Increase lb.	Decrease lb.
Austria	8,231	14,873	—	6,642
Belgium	14,424	13,590	834	—
France	98,952	100,001	—	1,049
Germany	346,959	352,252	—	5,293
Holland	30,211	26,351	3,860	—
Italy	13,521	6,730	6,791	—
Russia	3,949,740	2,714,003	1,235,737	—
Spain	18,700	44,650	—	25,950
Sweden	78,088	42,471	35,617	—
Turkey	18,733	73,974	—	55,241
India	567,616	1,091,559	—	523,943
Australia	15,606,833	15,126,891	479,942	—
America	3,080,002	2,180,188	899,814	—
Africa	288,239	372,242	—	84,003
China	1,384,490	1,185,445	199,045	—
Singapore	83,813	59,867	23,946	—
Mauritius	100,248	33,299	66,949	—
Malta	257,232	196,852	60,380	—
Total	25,946,032	23,635,238	3,012,915	702,121

Increase	3,012,915 lb.
Deduct Decrease	702,121 ,,
Net Increase	2,310,794 lb.

Refering to past year's estimates and results, we take over the following from our Handbook and Directory as of interest at this time:—

CEYLON TEA EXPORTS.

	Estimated by Planters' Association. lb.	Estimated by Messrs. Forbes & Walker. lb.	Exports as per Chamber of Commerce Returns. lb.	Exports according to Customs Returns. lb.
1899	125,000,000	125,000,000	129,894,156	—
1898	120,000,000	124 000,000	119,769,071	122,113,573
1897	119,000,000	120,000,000	11[illegible],054,567	114,466,318
1896	101,000,000	105,000,000	108 141,412	110,095,358
1895	90,000,000	89,000,000	97,939 871	98,581,060
1894	88,000,000	90,000,000	84,591,714	85,376,322
1893	77,000,000	78,000,000	84,406,064	82,269,353
	"Observer" Office Estimates.			
1892	80 000,000*		71,153,657	72 279,984
1891	68 000,000		68,274,429	67,719,371
1890	46,500,000		46,901,554	45,799,512
1889	32,000,000		34,048,085	34,345,859

It may be explained that the Customs enter the exports as each shipment is put on board a vessel in the harbour: while the Chamber only takes cognizance of the vessels and cargoes as they clear from the port.

A NEW INDUSTRY.

A Cityman writes under date London, 15th December:—"Talking to a man down Mincing Lane, with whom I have been connected in the Indian Bird, Bristle and Cow Tail Hair trades, for a good many years, the idea struck me that perhaps Ceylon might find it to her interest to do a trade in these articles. So I send you a report of each to show the prices realised at the last sales. The Bristle report is hardly a fair one as it does not give any description, but I can say Bristles are now selling very high. They must be stiff, and well washed, the different lengths tied up in bundles with strings of about 1½ to 2 inches in diameter. It is a large trade and pays well as the demand for fine Bristles exceeds the supply. They come over in cases of about 100 lb. Cow Tail Hair is sent press packed in bales of 3,400 lb. Anyone wanting to see if they can do anything with these articles, had better send a sample per sample post, which I will get valued free of charge with pleasure; then they send a small trial shipment, if the valuation seems satisfactory. In this way no one can lose much even if the experiment does not pay." The report is as follows:—

"I enclose Hale and Son's, Bird and Bristle report of prices obtained at public sale for these articles from India and elsewhere. Could not your people do something in these lines to their advantage? Cow Tail Hair well washed and free of skin sells at 10d lb. which I believe leaves the Indian trader a large profit, as they were content with 5d not long ago. If your readers want any further information I shall be pleased to send it, and will get any samples they care to send, valued and reported on free of charge."

* Planters and merchants whom we consulted were greatly out in their anticipations for 1892: in consequence of the very large increase of 22 million lb. between 1890 and 1891, it was felt to be quite safe to put on another increase of 12 million between 1891 and 1892: but the result only showed 4½ million lb. of increase by the Customs figures.

TO ALL PARTS OF ASIA, AFRICA, AMERICA AND OCEANIA.

Seeds & Plants of Commercial Products.

Castilloa Elastica Cervantes.—Orders being booked for the coming crop of seeds available in March and April, selected seed from very old trees. R. N. Lyne, Esq., Director of Agriculture, Zanzibar, writes under date 24th August, 1899:—"Please send me 200 seeds of Castilloa Elastica for further trial; the seeds of Castilloa you sent me last August germinated very well." Price and particulars in our Circular No. 32; special quotations for large orders according to quantity; immediate booking necessary to avoid disappointment.

Hybridised Maragogipe Coffee.—A larged-beaned superior variety of Coffee in demand; orders booked for the coming crop of seeds, February and March delivery. Price according to quantity on application.

Hevea Brasiliensis (Para Rubber).—Orders being booked for the coming crop available in August and September, 1900. This is the only crop of seeds in the year. All orders should reach us before the end of July to avoid disappointment, as we have to make arrangements in time; guaranteed to arrive in good order at destination. We have already booked a large number of orders. A Sumatra Planter writes, dating 9th March, 1899:—"I consent to the price of £——per thousand. I herewith order 50,000 upon condition that you guarantee at least 33 % seeds germinating." Plants can be forwarded all the year round in Wardian cases. Price and particulars as per our Circular No. 30. A Borneo planter writes dating, Sandakan, 17th August, 1899:—"The last lot of Para seeds turned out very well."

Ficus Elastica (Assam and Java Rubber.)—Seeds supplied by the pound with instructions; price according to quantity. This tree grows equally well in high and low land, in forest and grass land, its cultivation being extended largely by the Indian Government. For price of seeds with particulars as per our Circular No. 33.

Manihot Glaziovii (Ceara or Manicoba Rubber).—Fresh seeds available all the year round; price as per our Circular No. 31. It is superior to Mangabeira rubber and second to Para rubber.

Urceola Esculenta (Burma Rubber) and **Landolphia Kirkii** (Mozambique Rubber).—Seeds and plants, both are creepers.

Cinchona Seeds.—Different varieties.

Sterculia Acuminata.—(Kolanut). Superior quality, seeds and plants; price on application, packed to stand the transit well for several months, a hardy tree, cultivation easy.

Erythrina Lithosperma.—Thornless variety, new crops of seeds ready in December, May and June Price according to quantity on application.

Seeds and Plants of Cinnamon, Nutmeg, Clove, Sandlewood, Pepper, Cardamom, Vanilla, Arabian, Liberian and Maragogipe Coffee, Cacao, Tea, Coca, Fibre, Medicinal and Fruit Trees, Shade and Timber Trees, Eucalyptus various varieties, also Palms, Bulbs, Orchids, &c.

Our enlarged Descriptive Price List of Tropical Seeds and Plants of Commercial Products for Foreign Countries for 1899-1900 are now being forwarded to applicants in different parts of the world. Also Descriptive Price Lists of Seeds and Plants of Fruit Trees, Bulbs, Tubers and Yams, and Orchids.

"SOUTH AFRICA."—The great authority on South African affairs of 25th March, 1899, says:—"An interesting Catalogue reaches us from the East. It is issued by William Brothers, Tropical Seed Merchants, of Henaratgoda, Ceylon, and schedules all the useful and beautiful plants which will thrive in tropical and semi-tropical regions. We fancy Messrs. Williams should do good business, for now that the great Powers have grabbed all the waste places of the earth, they must turn to and prove that they were worth the grabbing. We recommend the great Powers and Concessionaries under them to go to William Brothers."

A leading Planter writes from *New Hebrides* under date 17th January, 1899:—"I shall like a few more of your Catalogues to distribute through these Islands, as I feel sure many would place themselves in communication with you, did they know where to write for Seeds and Plants."

Our New Descriptive Price Lists of Seeds of Shade Trees for Coffee, Cacao, Tea, Cardamoms, &c., Timber Trees, Trees for Avenues, Hedges Wind and Shelter Belts, Ornamental Trees, Shrubs and Climbing Plants; and Seeds and Plants of Palms, Calamus, Pandanus, Cycads, Tree and other Ferns, Crotons and Dracinas, now being prepared and will be ready shortly.

Agents in London:—MESSRS. P. W. WOOLLEY & Co., 33, Basinghall Street.

Agent in Colombo, Ceylon:—E. B. CREASY, Esq.

Telegraphic Address:
WILLIAM, VEYANGODA, CEYLON.
Lieber's, A.I. and A.B.C. Codes used.

J. P. WILLIAM & BROTHERS,
Tropical Seed Merchants,
HENARATGODA, CEYLON.

THE HEAVIEST-YIELDING TEA PLANTATION IN CEYLON—IF NOT IN THE WORLD?

Mariawatte plantation near Gampola—opened originally in tea by the late Mr. David Reid with Messrs. Rutherford, Tod and Mackay as partners and now owned by the Ceylon Tea Plantation Company, Limited—has brought much credit to the Tea Enterprise of Ceylon as well as much profit to its fortunate proprietors. It covers a considerable portion of the site of Royal Gardens belonging to the Kandyan Kings, which came into possession of the Byrde family, and by them was cultivated by coffee, but never with much success. This is explained by the easy undulating, almost flat, character of most of the fields, which does not at all suit a fruit crop like coffee; while tea revels in flats where the soil is fairly good or well-manured. In the assets of the late firm of Messrs. Byrde & Co., het Gampola lands were put down for a mere trifle, so little did the experienced coffee planting valuators anticipate that they would ever include the richest tea plantation in Ceylon. But such a few years later proved to be the case, and it will be seen from the interesting return appended—which we owe to the Company's Manager—that tea reaching now to 20 years old shows no sign of falling off, but rather gave an increase of crop during the past year. Mariawatte began to be a show-place for visitors interested in tea about 1885-1888, and we can recall Assam proprietors (of whom we had many calling in those days) declaring to us, after an inspection of the estate and of other upcountry places, that they were quite satisfied *tea could not last in Ceylon*—that 8 or 10 years more would see both the bushes and the soil exhausted! Twelve and fourteen years have already passed and yet Mariawatte continues to flourish exceedingly; while we have heard of no abatement of vigour in the tea of Loolecondura, Hewaheta, which includes one of the oldest fields in regular cultivation in Ceylon, namely 30 to 32 years of age. This is very satisfactory in reference to the permanence of the industry, which, indeed, is based on a shrub, regarded by the Kandyans as a regular jungle plant, and not a temporary visitor like coffee. Meantime here is the return which has just come to hand and which will, as usual, be embodied in our *Handbook*:—

MARIAWATTE ESTATE.

Yield of old Tea, 101A. 1R. 0P.

Year.		Made Tea lb.		Yield per acre lb.
1884	...	109,230	..	1,078
1885	...	117,842	...	1,163
1886	...	105,925	...	1,046
1887	...	115,996	...	1,145
1888	...	106,410	...	1,050
1889	...	113,834	...	1,124
1890	...	140,144	...	1,384
1891	..	120,366	..	1,188
1892	...	119,909	...	1,184
1893	..	115,440	..	1,140
1894	...	110,448	...	1,090
1895	...	118,560	...	1,170
1896	...	113,360	...	1,119
1897	...	105,729	...	1,044
1898	...	108,423	...	1,073
1899	..	111,987	...	1,108

Yield for the whole Estate, 458A. 1R. 17P.

Year.		lb.		Rainfall.
1892	..	643	...	95·74
1893	...	817	...	86·22
1894	...	750	...	72·00
1895	..	886	...	100·28
1896	..	896	..	115·41
1897	...	926	...	111·25
1898	...	738	...	79·90
1899	..	749	...	106·81

Mariawatte Estate, D. M. SALMOND.
Gampola, 1st Jan., 1900. Superintendent.

CACAO AND THE AGRICULTURAL SOCIETY OF TRINIDAD.

Botanical Department, Trinidad.

E. Tripp, Esq., Secretary, Agricultural Society, Port of Spain.

Sir.—I beg to forward herewith a report upon a portion of diseased Cacao recently forwarded to this Department by a prominent planter, who reports that many trees are affected.

The Fungus now reported upon is quite distinct from those formerly described as phytopthora omnivora and nectria bainii—but is a species of the latter genus, which is thought to be identical with that attacking the Cacao trees in Ceylon.

The treatment recommended by Mr. Massee is simple and I would strongly urge that it should be followed by our planters wherever the disease is seen. I should be glad to have the report laid before the Society.—I am, yours truly, J. H. HART, F.L.S.

DISEASED CACAO BARK FROM TRINIDAD.

The bark is killed by a parasitic fungus, a species of Nectria. The sketch in the letter that acompanied the bark represents the conidial-Fusarium stage, and the densely clustered, bright red spots-on the outside of the bark are the ascigerous condition. These latter, which appear after the conidial stage, had probably developed during the journey.

The symptoms appear to be absolutely identical with the Cacao disease in Ceylon, but as no scientific report has yet appeared, it is impossible to state whether the West Indian Nectria is specifically identical with the one causing damage in Ceylon.

Damp, stuffy, conditions favour the disease, and as Nectrias are wound fungi, care should be taken to minimise the number of bark wounds.

Cut out diseased portions and wash the wound with corrosive sublimate in methylated spirit, afterwards cover with tar or other suitable material. The conidial form which appears under the form of small white patches, should be sought for, and destroyed as ab ve,

G. M.

2-11-99.

The above is—Mr. Massee's report.

Received from Director Royal Gardens Kew, November 29th, 1899.

J. H. H.

(*Port-of-Spain Gazette*, Dec. 7, 1899.)

CORROSIVE SUBLIMATE FOR CACAO BARK DISEASES.

TO THE EDITOR OF THE PORT-OF-SPAIN "GAZETTE."

Sir,—Mr. Massee's report accompanying Mr. Hart's letter, published by Mr. Tripp in today's *Gazette* will be read and welcomed by the cacao proprietors of Trinidad.

It is satisfactory to know, on the authority of Kew Gardens, to which we owe so much, that the cacao-bark disease is due to the parasitic fungus "nectria" and that corrosive sublimate will eradicate it, and planters will gladly turn to the remedy.

It is well, however, that directions should be given for the use of such a powerful disinfectant and poison; and pending such directions from the Botanical authorities, it should be generally known that corrosive sublimate corrodes metals, and can only be used in glass, porcelain, or vulcanite vessels—In solu-

tion, one in 1,000,000 will hinder the growth of anthrax bacilli, while one grain in five gallons of water will entirely prevent their growth. A solution of one in 500 is irritating to hands and skin, and probably one in 5,000 is quite strong enough for ordinary solutions.
—I am, Sir, Your Obedient Servant,

FITZGERALD PROCTOR, M.R.C.S., England.

Port-of-Spain, Dec. 6th, 1899.

TEA CORPORATION LIMITED (OF CEYLON.)

The annual general meeting of the Tea Corporation, Limited (of Ceylon), was held at Winchester House, Old Broad-street, on Tuesday, the chairman (Mr. Cyril Gurney) presiding.

The SECRETARY (Mr. E. T. Bartlett) having read the notice convening the meeting,

The CHAIRMAN said: Gentlemen, you have all received the accounts for the year ended June 30 last, and I think that I shall best explain the results of the year's working by going shortly through them. With regard to the working account, you will see that the gross amount of tea produced on our estates for the year under review was 1,234,442 lb. This was by no means so large a crop as we had hoped to secure, the shortage being mainly due to the long drought and subsequent exceptionally heavy rains which greatly interfered with the cultivation in the latter part of the year; it is satisfactory, however, to find that we have an increase of quite 100,000 lb. on the crop of the previous year. With regard to the price the tea sold for—it fetched an average of 6⅝d. per pound gross, or just under 6d. per pound net, after deducting all the usual expenses, which amounted to less than 1d. per pound. The net price of just under 6d. was a great improvement on the previous year, and we are pleased to be able to say that we have—after much trouble—been successful in effecting a great change for the better in the quality and make of the tea. As you will have seen from the report, Mr. Tatham hopes to show a further improvement in quality this year, from being able to pluck finer, while at the same time increasing the quantity; we hope, therefore, with favourable markets, to show a continued improvement this year in the price our tea fetches. With regerd to this I should like to emphasise what has already been referred to in the report —viz., the increased return that may be looked for as the result of manuring. As soon as your directors got possession of the estates they instructed Mr. Tatham to apply manure where it was most needed, and though this is, of course, responsible to some extent for the improved quality of the tea plucked this year, we have not yet experienced the full benefit of this expenditure. During the year covered by these accounts we have spent a considerable sum in manuring other parts of the estates, the results of which will continue to be felt for the next two or three years. The whole of this expense has been charged to profit and loss account. The total profit carried to profit and loss account is £8,867 19s, from which must be deducted rent, office expenses, salaries, directors' and trustees' fees, &c., amounting to £1,057 4s 4d, also interest, £3,356 18s 8d, &c., leaving a balance of £4,327 1s 9d carried to the balance-sheet. With this sum we have written off the loss of last year, amounting to £1,620 6s, paid £1,950 preference interest, and propose to write off £393 9s, from preliminary expenses, carrying forward £363 6s 9d. With regard to the year beginning on June 30 last, we expect to obtain fully 1,250,000 lb. of tea. At present, in spite of bad pluckings in July and August, which was due to previous heavy rains, we have an increase on 1898-99 crop, and Mr. Tatham is quite sanguine that the estimate will be fully obtained—indeed, unless something unexpected happens there seems little doubt that we shall have an increase over last year. The cost of production is estimated a trifle higher than last year, but this includes a liberal expenditure for manure, which, as I have already said, your directors consider a profitable expenditure; but we have sent out instructions that every economy is to be exercised consistently with good cultivation and management. Sales of this year's tea during the last three months show that on an average a higher price has been obtained than in the same period of last year, though there has been no corresponding increase in the average price of Ceylon teas. In view of these figures, your directors have reason to take a much more hopeful view than they could this time last year, and think the shareholders may look forward to still better results being shown in the future. You will remember that at the last meeting we said that we hoped to be able to arrange for some reduction in our agents' charges; we are pleased to say both they and Mr. Tatham have agreed to a reduction of the terms upon which they undertook the business, which will decrease the expenditure in this and future years. I think our best thanks are due to Messrs. A. Gibbs and Sons. and our agents and manager in Ceylon, for their liberality in meeting us in this matter. With regard to the proposal to raise £20,000 additional debenture stock, we think that this would prove of great value to the company's property. I should like to explain, however, that we do not propose to raise the whole of this at once, and so increase the fixed charges of the company by £1,000 a year; but we think it is of great importance to the future of the company that their property should be fully developed. At present there is a considerable acreage, especially at Doteloya—about 800 acres —which is entirely unproductive. This, if planted up, would, we think, prove of considerable value to the company and add materially to the capital value of the estates, besides enhancing profits, which would benefit the shareholders. Mr. Hancock, who has lately returned from Ceylon, can give you further information with regard to this. If the shareholders respond, the directors are prepared to do their full share in subscribing for the money. You will probably remember that in the report last year, and also in the more recent circular which was sent to shareholders, mention was made of indications of valuable deposits of plumbago on some of the estates. We instructed our manager to take in hand prospecting on the estates which it was thought contained veins which it might prove profitable to work, with the result that on three estates plumbago was found. On one of these— viz., Nahaveena—the outturn was very small, and only paid the expenses of working it; but on the two others—viz., Springwood and Lauderdale— plumbago was found of good quality and in fair quantities. These estates were worked, and resulted in a profit of about £250 on an output of 35 tons. It is impossible, however, to go on working these veins without some capital expenditure. Your directors were approached by parties on the spot and by responsible people in London with a view to their leasing the mineral rights over the company's

estates. There was, however, considerable difficulty in arranging terms with the latter. The company who wished to lease the rights were, we are given to understand, prepared to lay out considerable sums in systematically developing plumbago on the various properties; but they naturally required a long lease of the mineral rights, so that they might have some chance of recouping themselves for their initial outlay. A lease of twenty-one years, with the option of renewal for another twenty-one years, was the period they required. I did not think your directors would be justified in leasing the mining rights of the company for so long a period without putting the matter before the shareholders. We, however, arranged a provisional agreement, by which this company would receive certain royalities on the gross output of the mines, which we were prepared to submit for the shareholder's approval. We have, however, lately received from Mr. Tatham advices that the main vein, consisting of very good plumbago, which was always believed to exist on Springwood Estate, had been found, and we therefore, told the company we had been in negotiation with, that in view of these later advices, we could not conscientiously recommend the shareholders to confirm the agreement we thad provisionally made with them, and we asked them if they would give more liberal erms which we could put before you. They declined, however, to amend their offer, and the negotiations have therefore recently come to an end. We have every reason to believe that valuable veins of plumbago do exist on the Company's estate, which will prove a valuable asset. The question is, What is the best way of dealing with them? Having stated so much, we should like to take the sense of the meeting as to whether it would be advisable to lease the mining rights, or whether we should endeavour to work the veins ourselves. In conclusion, I should like to say that I think the thanks of the shareholders are due to Mr. Tatham for having so energetically carried out the wishes of the board, and he has constantly succeeded during the last year in much improving the position of the Company, and also Mr. Low, the manager of Springwood and Barra, to whom the discovery of the plumbago is mainly due. I beg to move the adoption of the report and accounts.

MR. E. H. HANCOCK seconded the motion. He said he was on the Springwood property in July last, where the plumbago was found. It was of good quality and indicated some larger veins in the neighbourhood. It would put this company, he thought, in a very different position in the future. Judging from the telegram just received, it should encourage them to work the plumbago themselves. There was always a certain amount of risk in mining, but at present this mine did not run very deep. It was only 60 ft. from the surface when he was there. The only thing that prevented their working it very much quicker was that they had no pumps, and were baling out in buckest. It had never been worked scientifically at all, but he thought that after a little outlay by making a moderately deep shaft and erecting pumps they could keep it free from water and that such a valuable vein they had better work themselves. He did not think that plumbago had ever been scientifically mined in Ceylon. There was only one place he knew of where they were attempting to do it and that was upon one of Lipton's estates; but what they were doing he did not know, because Liptons kept the matter very quiet. He believed they had spent a lot of money, but he did not know the return. With regard to the other estate in the neighbourhood, Landerdale, the indications there of plumbago were the best he had ever seen anywhere, and he had no doubt they would find a good and valuable vein. Seeing that they had this good vein, he had come to the conclusion that they ought to work it themselves, and not to part with it unless they could get a very tempting offer. The chairman had said that Doteloya they had about 800 acres. He did not say that all that would be valuable for planting out, but he had no doubt they could pick out some 600 acres. If they were to plant that they could do it much cheaper than other people, because they had the labour on the spot, and could practically make a new estate of 600 acres at small expense, which would add considerably to the capital value of the company. It was virgin land, and they would have an estate of 600 acres adjoining their other estate, which would give them good value without using manure. There was no doubt that their proper course would be to open up that land, although he did say that they could do it all at once. They could do it, perhaps, at the rate of 200 acres per annum, according to the amount of labour they could spare from the other estate, and in a few years that land would place the Company in a very sound position.

MR. LEWENZ asked how many acres of the whole property were under cultivation.

The CHAIRMAN: About 3,000.

MR. HANCOCK added that he was quite satisfied that on those estates where manure was required it paid. He had tested that.

The motion for the adoption of the report and accounts was then carried.

The CHAIRMAN invited an expression of opinion as to the development of the plumbago—whether the shareholders were in favour of developing the property themselves or leasing it.

After a long discussion, in which Mr. Mozley, Mr. Lewenz, Mr. Shand, Mr. Preston, Mr. A Bull, and others joined,

The CHAIRMAN said that for the last few days they had been getting it about half a ton a day. The average had been about £25 a ton. Of course, they had to take from that the cost of getting it out. For this year they had had to write off the loss of last year, and it was that that had handicapped them, otherwise they had earned sufficient to cover the whole of the preference interest. A certain amount of preference interest had been paid this year. As to the prospectus, they had made the tea very much at the same price as mentioned in the prospectus, and sold it at the same price, and the difference between the year's working and what the prospectus put forward was a fall of about 2d. in exchange. The difference in exchange had made a loss to this Company of £2,500.

On the motion of Mr. Foss, seconded by Mr. Preston, the following resolution was carried: "That the board be authorised to spend a sum not exceeding £500 upon working the plumbago, provided that they be advised by a mining expert that it is advisable to do so."

The CHAIRMAN then moved: "That the board be authorised to issue, subject to the debenture trustees' consent, an additional amount of debenture stock, not exceeding £20,000."

MR. HANCOCK seconded the motion.

Sir C LAWSON submitted a direct negative: "That the board be not authorised to issue any more debenture stock."

Upon a show of hands, the motion of the Chairman was carried by 12 to 6.

The retiring directors (Mr. E H Hancock and Mr. T J Lawrence) having been re-elected, the auditors were reappointed.

A vote of thanks to Mr. F. Tham (the managing director in Ceylon) and to the agents (Messrs. Anthony Gibbs and Sons) terminated the proceedings.—*H. and C. Mail*, Dec. 22nd.

THE INDIAN TEA ASSOCIATION (LONDON.)

The following is an abstract of the proceedings of a meeting of the committee held on Tuesday, December 19th, 1899.

Present : Messrs. D Cruickshank (in the chair), C C McLeod, J Riddell, F A Roberts, A G Stanton, J N Stuart, W H Verner, and S A Went.

The minutes of the last meeting, held on Tuesday, December 5th, were read by the Secretary and confirmed.

Correspondence with Calcutta, which been previously circulated to the members, was laid upon the table.

The revised estimates, showing available crop (140 millions for London) and also the quantity of tea entered for export to the United Kingdom, taken from the Calcutta Customs daily entries, for first half of December, 11,200,000 lb., against same period last year, 5,710,000 lb., making a total from April 1st, 1899, to December 15th, 1899, of 129,792,000 lb., compared with 116,757,000 lb. for same period last year were noted.

WAREHOUSE CHARGES.—The Secretary and Mr. McLeod reported having seen Mr. Poock, who was unable to say that any definite decision had been come to by the Tea Clearing House Committee. He had promised, however, to write to the Association as soon as it had been approved by the Chairman.

CONDITIONS OF SALES.—It was noted that a meeting had been fixed to take place this week between the buyers and Special Sub-Committee of India and Ceylon to discuss this question.

SCHEME FOR A DOCK TRUST FOR THE PORT OF LONDON.—A letter was read from the Secretary of the London Chamber of Commerce inviting the Association, in conjunction with the Ceylon Association and the Tea Buyers' Association, to nominate two members to jointly represent the tea trade on the sub-committee that has been formed to consider this question. It was decided to request the Chamber to allow a nominee to be appointed for each section.

WORK IN AMERICA.—A cheque was signed for £159 19s 11d, being remittance to New York in payment of India's share of advertising British grown teas in the United States for the month of November.

At the close of the meeting of the General Committee a meeting of the Paris Exhibition Committee was held to meet Mr. Langdale and a gentleman from the India Office, in order to discuss plans and arrangements for finishing the Indian Tea Courts in preparation for the opening of the Paris Exhibition on April 15th, 1900.

ERNEST TYE, Secretary.

—*Home & Colonial Mail*, Dec. 22nd.

PRODUCE AND PLANTING.

TEA IN THE UNITED STATES.—The imports of tea for the first ten months of 1899 were 68,913,718 lb., against 54,887,062 lb. for the same time in 1898, and 79,310,181 lb. in 1897. Of the total imports Japan furnished 29,782,657 lb., or 43½ per cent. ; China, 32,840,467 lb., or 47·8 per cent. of the total imports. From these figures it will be seen that British tea-growers have a big task if they are to displace China and Japan teas in the United States. In the first place, as the New York correspondent of the "Grocer" points out, Americans are not partial to the beverage, and probably because of climatic influences. In the next place, nine out of ten consumers care little for niceties of flavour, and are satisfied with a hot beverage so long as there is no objectionable feature. The Americans are yet to be educated up to an appreciation of fine flavour; and to some extent this is true of coffee.

THE RUSSIAN TEA EXPERIMENTS.—An expert points out with reference to the tea growing experiments in Russia that tea production there on a commercial basis is an impossibility. It cannot be produced in the Caucasus to sell at such a low figure in Russia as imported Indian and Ceylon teas do, even after paying the import duty of 1s 10½d per lb, which the local production entirely escapes. In addition to that fact there is no comparison in point of quality.

NEW FIBRE IN BRAZIL.—A correspondent of the "Jornal do Commercio," of Rio de Janeiro, draws attention to the fibre of the guaxima, which grows wild everywhere, but is found in large quantities on the low lands near the sea. It is believed that this fibre would prove an excellent substitute for jute, which is all imported, and when cultivated prove the basis of an important industry. The threads are long and very strong, and will resist the action of water, the fibre being used by fishermen on the coast for their nets, which last for years if soaked in a tincture of aroeira bark. The process of elaboration of the guaxima fibre does not requre long maceration in vessels, as is the case with jute; immersion for a few days in running water being sufficient to loosen the green outer bark with the hands, after which the rods are exposed to the sun in order to dry the woody part; this then contracts and allows the fibres to be easily separated. A sample was to be sent to England to be spun and woven, and its uses and application thoroughly investigated.—*Home and Colonial Mail*, Dec. 22.

TEA IN AMERICA IN 1899 AND PROSPECTS.—The correspondent of the London *Grocer*, writing from New York on November 29th, has the following rather discouraging deliverance in referenee to our staple and its prospect of being more largely consumed:—

The imports of tea for the first ten months of 1899 were 68,913,718 lb., against 54,887,062 lb. for the same time in 1898, and 79,310,181 lb. in 1897. Of the total imports Japan furnished 29,782,657 lb., or 43½ per eent.; China, 32,840,467 lb., or 47·8 per cent. of the total imports. From these figures it will be seen that British tea-growers have a big task if they are to displace China and Japan teas in the United States. In the first place Americans are not partial to the beverage, and probably because of climatic influences. In the next place, nine out of ten consumers care little for niceties of flavour, and are satisfied with a hot beverage so long as there is no objectionable feature. The Americans are yet to be educated up to an appreciation of fine flavour; and to some extent this is true of eoffee. It is a significant faet that in the older settled sections and wherever wealth abounds such articles are bought on their merits, while in the newer sections anything seems to go. New England pays the highest price for eoffee; so do the Middle States; while the West and South are the large consumers of low-priced coffee. The great field for British growers of tea to exploit is in the large cities. The consumption of tea is about 95,000,000 lb. per annum, or 1·28 lb. *per capita*, that of beer 15 gallons, coffee 18·4 gallons.

A VISIT TO HAKGALA GARDENS.

(By a Newcomer.)

Such a visit must be always a treat to any lover of plants, and especially so when shown round by the courteous Superintendent. The weather on our visit was perfect: the sky cloudy to temper the sun, but no clouds over the vast Uva amphitheatre of hills except to wreathe the Namunukula peak. The grassy platform in the Gardens, from which this view is obtained, has been enlarged and a fitting wooden pavilion built where visitors can sit to a table to partake of their refreshment in face of the panorama—thanks to Mr. Nock's thoughtful attention.

Among the plants there is a new species of lily which Mr. Nock has named after Lady Ridgeway: the flower is cream-coloured. The wedding flower ("Morea Robinsonia" after Lady Robinson), has been, I regret to learn, nearly eaten out by porcupines. The fern, of which the natives make a curry, is interesting economically and the successful growth of the "selaginella," picked up near Horton Plains, is interesting to Botanists. The new scientifically arranged plots, when fully carried out, will afford further interest. I need not refer to the gratification afforded by a walk under the giant pines, eucalypts and "cupressus" and amongst the 30,000 plants of all degrees from the lycopodiums to the tree ferns, among which that peculiar to Ceylon (Alsophyla crinita) still is queen. On account of climate as well as interesting and beautiful surroundings, surely nowhere in Ceylon is a walk more enjoyable than in the Hakgala Gardens under the magnificent masses of rocky cliff towering 2,000 feet above the visitors. Long may Mr. Nock live, to superintend and preside over Hakgala!

[Mr. Nock, we suspect, will sympathise with the young lady—was it Miss Canning? —who, helping her brother to canvass the electors of Liverpool, so won their regard, that they all shouted as she appeared on the hustings:—"Miss Canning for ever"—only, however, to be answered with a smile and a bow,—"No thank you—I don't want to be *Miss Canning* for ever"! So, our correspondent must know that Mr. Nock can scarcely desire to be at Hakgala for ever, unless, indeed, his good services are recognised by a corresponding increment of salary.—ED. *T.A.*]

TEA PLANTING AND LABOUR PROSPECTS.

ONE of the most competent authorities in the island writes to us:—

"Tea has been doing wonderfully well in the last few months and blights have all but disappeared. They will be showing up again, however, when the dry weather sets in unless the manure which has been freely applied of late keeps them in check. Heavy manuring is all very well if one can be certain of the necessary labour to reap the benefits thereof, but risky otherwise and there is a feeling that with so much Railway Construction on hand coolies may become scarce. Advances are already rising."

With two or three millions of people suffering from famine in India, it does seem strange that there should be any scarcity of labour in Ceylon. The time has surely come for opening fresh districts of supply, and it is possible that the pioneers in this direction would not only benefit themselves, but local industry generally. The Railway contractors (including the Government) will certainly be bound to do something in this direction.

TEA IN AMERICA.

New York, Jan. 6.

It will be noted that last month's deliveries are up to the normal consumptive requirements of the country, being on a basis of 100,000,000 pounds annual consumption. There is not much life to invoice trading. Jobbing demand fair. Market steady. The following table shows, among other items, the stock of tea on hand in the United States on June 1st, 1899, and the estimated stock on June, 1st, 1900, together with the amount of visible supply on December 1st, 1899, and the total tea exports from China, Japan, Ceylon and India to North America during the season of 1899-1900:—

		Pounds.
Stock of tea on hand in the United States on the 1st of June, 1899 ...		28,200,000
Estimated total export from all China, Japan and Ceylon and India season 1899-1900, to North America	Pounds	
Green tea	15,000,000	
Japan	42,000,000	
Formosa	15,000,000	
Foochow and Amoy ...	4,500,000	
Congou, Shanghai ...	5,500,000	
Congou, Foochow ...	5,500,000	
India and Ceylon ...	12,000,000	
		99,500,000
		127,700,000
Withdrawals, June to Oct. 31.	36,935,456	
Withdrawals, est., for November	8,064,544	
		44,000,000
		83,700,000
Deduct direct shipments to Canada	22,000,000	
Deduct re-exports and rejections	1,700,000	
		23,700,000
Visible supply for United States, December 1st. 1899		60,000,000
Six months' consumption to June 1st, 1900, at 7,000,000 pounds per month, estimated		42,000,000
Stock of tea in the United States June 1, 1900, estimated		18,000,000

—*American Grocer*, Dec. 6.

A COFFEE-PLANTING CONTRACTOR on a plantation near Jaboticabal, São Paulo, met with a very disheartening experience a few days ago. He had managed to save 6,000$, which he deposited in a glass jar and then concealed it in the chimney of an unused stove in his house. One day while he was out in the fields, a black woman from a neighboring house asked his wife for permission to use the stove to make soap, and with the result that when the husband returned he found his precious savings in ashes. It was hard luck, but he should have found a better savings bank.—*Rio News.*

Correspondence.

To the Editor.

MEXICO AND ITS PRODUCTS BY A CEYLON PLANTER: CACAO; RUBBER; SUGAR AND COFFEE.

TABASCO, MEXICO.

DEAR SIR,—As promised you some months ago, I now send you a general description of this part of Mexico and its products. From San Juan Bautista, the principal trading town and Port for this district, to the Grijalva Coy.'s land, some 45 leagues, the land is chiefly level and slightly rolling with a very deep loam soil and there are many very fine cacao and sugar plantations to be seen along the road, owned by Mexicans and Spaniards and some few rubber plantations of small size also. The states of Tabasco and Chiapas are noted as being the home of cacao—"theobroma cacao"—the soil and climate being particularly adapted to its culture and I have found many trees growing wild and bearing a good crop in this land. The local method of planting is to clear the land, plant the cacao madre 20 by 15 feet or thereabouts and maize the first year, and the second year, or so soon as the shade from the madre is sufficient to plant cacao plants 15 feet apart between the row of madre. The only cultivation it then gets is two weedings a year with machetes and the greater part of the year there is a heavy carpet of weeds three feet high, which shuts out all ventilation and in consequence there is great deal of moss on the cacao trees. The cacao bears in five years, and the pods are gathered in the roughest manner, being torn off the tree by a blunt hook or forked pole generally destroying the eye at base of stalk and consequently much future blossom. The shrub is never pruned, but notwithstanding all this, it bears good and paying crops, about 50 pods per tree. Of course, there are some few plantations where better care is taken and on these the yield is larger: on some trees in the district of Macuspana 200 pods have been gathered from trees.

The cost of land, clearing, planting and weeding for five years, if properly done, is about $200 (two hundred dollars silver) say £20 for each hectare (2½ acres). The cost of gathering, curing and sacking the crop is about $4·00 (four dollars) per carga (60 lb.) say 4,500 to 5,000 lb. per hectare; value of crop on the plantation 40 cents per pound leaving a net profit of some $1,250 to $1,500 per hectare. Besides this, vanilla can be grown on same land as a side crop which makes quite an addition to the profits.

RUBBER (CASTILLOA ELASTICA), like cacao, is indigenous to the soil and is found growing wild here and when cultivated there is no more profitable tropical product or one so easily and cheaply produced; and some attention is now being paid to its its cultivation by Mexicans and Americans. It may be planted in the open clearing or under shade: it appears to thrive and grow equally well, under both conditions. Seed may be planted at stake, plants, or stumps, all have done equally well, planted by me. The cheapest way to form a plantation is to clear out the underbrush and any decaying trees likely to fall, and plant through the jungle 12 ft. apart Another way is to clear and burn off and then sow maize, planting rubber seed at stake 12 by 12 or 15 by 15 ft. Maize can be grown for two years making four crops which will pay for keeping the land clear. A plantation of 100,000 rubber trees so planted will cost at end of five years, including price of land, some $15,000 or $16,000—say £1,600. The fifth year a tree here, if *properly* taken care of and *properly tapped*, will yield from five to six lb. of juice equal to two lb.: pure rubber which at $1 per pound is worth at least $200,000 from 100,000 trees. I have seen trees that have been tapped for 20 years still yielding and the tapping had been done most barbarously. The cost of upkeep and production is small: one man will tap 20 trees per day. The juice is then put in a barrel and a solution of five oz. of sub-carbonate of sodium in water sufficient to cover the whole mass, which is churned up with a paddle every once in a while, and after 36 hours the water is run off: this is repeated until the rubber becomes white. This certainly is the enterprise for the small capitalist in Mexico.

SUGAR CANE.—There are many fine plantations on this river. The yield on some is 60 tons per acre. I have seen some cane-fields which I was assured by their owners were 35 years old, still yielding handsome returns, and they had had little or no cultivation all those years. From the best information I can get the average yielding here about is 50 tons cane per acre, which yields 70 per cent. juice in cane, 15 per cent. of sugar in juice, besides the molasses which is made into rum, white sugar is worth eight cents. per pound, molasses one cent per pound. 750 lb. molasses make one barrel rum worth $10. So that taking the product at only 45 tons per acre and upkeep and expenses of making sugar and rum at $20,000 for 100 acres, it leaves a profit of some $36,000 per 100 acres. The cost of machinery is considerable and for that reason the small capitalist cannot enter the field as he can in rubber and cacao.

COFFEE produces heavily and there is no leaf disease, or any other so far as I can see. There are also many other products that can be grown with profit, as side crops on cacao or rubber plantations; but I will not enter into them in this letter, as I feel I have already trespassed too much on your valuable space —Yours very truly,

E. O. DARLEY.

CEYLON GREEN TEAS.

Toronto, Dec. 8.

DEAR SIR,—We note your comments in reference to our letter to you, in the weekly issue of the *Overland Observer* of Nov. 6th; and we beg to say that Ceylon is exporting Green Teas today, we have them on hand, we have sold a considerable lot, and we have more close to hand and still more on order for regular shipments from Messrs. Whittall & Co., of Colombo, who will be glad to give you any information, we have no doubt, about what is being exported in Ceylon Green Teas.

We believe there is a big market here for those teas, otherwise we would not have commenced a campaign in their favor. We believe the Ceylon Greens are well-worthy of the planters' attention. —Yours truly,

P. C. LARKIN & Co,

SPURIOUS OR WILD CINNAMON.

Colombo, Jan. 6.

SIR,—In support of the action originally undertaken by the Chamber of Commerce, I beg to enclose copy of letter from Messrs. Darley, Butler & Co. to the London Produce Brokers' Association. At foot of letter I append particulars of the result of effort to sell the wild cinnamon shipped.—Yours, &c.,

R. W. NUNN,—Secretary.

RESULTS OF SALE REFERRED TO.

2,280 bales offered, none sold, stuff valued before sale at 4d to 5½d per lb., vainly sought buyers after at 2½d. Principal marks offered were :—

H. M. S. & Co.	...	325 bales
D. B. C.	...	920 ,,
M. D. J.	...	214 ,,

M. A. K., D. S. S. and U. L. M.

Later news quotes ½d per lb. offered for some of the above.

The Chairman, General Produce Brokers' Association of London, Commercial Sale Room.

SPURIOUS OR WILD CINNAMON.

London, Dec. 1st, 1899.

DEAR SIR,—As importers of Ceylon Cinnamon we wish to call the attention of the General Produce Brokers' Association of London to the importation of various kinds of bark not in fact cinnamon under the classification of cinnamon, and to ask that the Association will, if possible, take up the matter with a view to preventing such bark, whether imported as quills in bales or as chips in bags being included in the imports, deliveries and stocks of cinnamon and cinnamon chips.

There is no doubt that the shipments of this spurious cinnamon from Colombo have done much injury to the trader in genuine cinnamon, and we commend the following facts to your consideration :—

(a) It is estimated that some 3,000 bales of quills of spurious cinnamon have been shipped from Colombo during the present year, the bulk of which has come to London and appears in the imports of cinnamon ; probably the bulk at the present time remaining in stock.

(b) Though some of the barks so shipped as cinnamon are of a genus belonging to the same family (Lauraecae or laurel family) as genuine cinnamon, they are not of the same genus making them in fact quite distinct from genuine cinnamon, while some belong to an entirely different family altogether—in the one case the difference in genus differentiates the bark entirely from genuine cinnamon, in the other there is no connection at all.

(c) The use of such bark, if it is used at all, must be for the purpose of adulteration. In this connection we would ask you to ascertain from those who are selling this spurious cinnamon the relative value compared with geuuine cinnamon. In order to give you all the information we can, on the subject we enclose herewith :—

(1) Copies of correspondence in Ceylon including a report from Mr. A Schulze to the Chamber of Commerce.

(2) Letter from the Secretary, H M Customs, to the Secretary of the Ceylon Association in London, in reference to action which the Customs' authorities may take here.

We are indebted to the Secretary of the Ceylon Association in London, for these documents, and are assured of the support of the Association in any steps that it may be desirable to take to protect the Cinnamon Trade of Ceylon.—We are, &c. DARLEY & BUTLER.

CACAO CULTURE AND DISEASE: PRICES AND PROSPECTS.

LONDON, Dec. 22, 1899.

DEAR SIR,—I enclose two cuttings out of the "Port of Spain Gazette" (Trinidad, W.I) *re* diseased cacao bark from which the Trinidad planters seem to be having a good deal of trouble just now. As the remedy seems highly poisonous, I consider Dr Proctor's (who is also a cacao planter) letter very *apropos.** If, as Mr. Massee says, the disease is caused by damp, stuffy conditions, this strengthens my idea that many people grow their cacao under much too damp circumstances ; under the idea that the damp humid banks of the Brazilian rivers are the habitat of the original trees, many seem to think cacao cannot be too damp and hot. It is a great mistake, which, however, the Ceylon planters seem fully allive to. I also enclose my notes on the London Cocoa Market.

One of my cacao planting friends in Trinidad writes me that, judging from all the estates he has visited, there will be practically no cocoa about for Christmas ; except, perhaps, a little, small proprietors scrape together ; the promising pcds that were coming on a little time back having turned black. Another reliable authority bears this out by saying he does not expect London will see any appreciable quantity of Trinidad cocoa until the middle or end of February, so evidently the crop will be a full month late." The weather, when the mail left was showery and generally more promising for agriculturists.

The Government not being buyers, no sales were held last week, and I don't think we should have had any this week, but for the desire of one broker to realise some cocoa belonging to a Guayaquil house who is in difficulties; but prices are firm to 1s higher all round, and considering it is Christmas week, it has been a busy one.

Privately a fair quantity of Ceylons have been sold, anything at all decent being quickly taken up, and even inferior stuff sells better. Prices privately have ranged from 63s 6d to 68s for common to fair native, up to 76s for good red. Fine red still commands fancy rates, and at this week's sale some good bold, rather dark break sold at 85s, good small 60s to 65s, and fair red 75s, 73 bags good dull red Java, very whitish in break also fetched 85s, which I consider a high price. There is no doubt any falling-off in production this year, which in the face of 1899's bumper crops, is not unlikely, will cause some excitement among buyers, especially if the war continues, and the Government are steady buyers, which seems likely to be, for I see by the press, every soldier carries 4oz. cocoa paste as "emergency rations," besides what is given out in lieu of tea and coffee.—Yours truly, H. H. S.

WILD OR SPURIOUS CINNAMON.—With reference to the correspondence in the other column sent us by the Chamber of Commerce, surely no one, after this exposure of the pecuniary as well as intrinsic value of the stuff shipped as wild cinnamon, will repeat the operation? We suppose 2d a lb. is required to cover cost of shipping, freight, charges, &c.—so that to get only ½d must mean a heavy loss. Such a trade should surely die out at once?

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* See page 478.—ED. *T. A.*

BANDA NUTMEGS AND MACE.

BY O. KAMERLINGH ONNES.

BEING AN ACCOUNT OF THEIR HISTORY, CULTIVATION, TRADE AND USE.

(Compiled with the aid of data placed at our disposal by the Crediet-en Handelsvereeniging "Banda" *Amsterdam*.)

I. HISTORY.

INTRODUCTION.

Oh, it will not take you long, we do not ask many hours to bring the gracious reader out to the Moluccan Archipelago 300 years back, and ship him safely home instanter.

We perfectly understand any man's eagerness to use his time well, and we won't make him grumble. So any one even in the busiest moment of his life, may feel safe and commence to read.

But he must bear in mind one thing. He should be fully aware that he has to know somewhat more about Banda produce than he knows just at present, in order that he may pass the rest of his days all the happier for it.

For whoever, clearly realizing that he may have in great abundance at penny price what others longed for, wrote poetry on and even shed blood for, what man would he be that, remembering the *History of Spices* and, enjoying exquisite dishes, should not feel happy that he lives in the present time?

In fact though we admit the possibility of any type, there is no such man, and whilst we agree with the rest, let them agree with us and give their best and kind attention to what we have to say about Banda nutmegs and mace.

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300 YEARS BACK IN HOT HASTE.

Spices had come to Europe long before the Dutch dared to open a direct trade with the Indies. We do not know exactly how many years it is since the trade of spices commenced, but we may take it that the Arabs were amongst the first to value nutmegs and mace either at the beginning or near the middle of the Ninth Century. Their learned doctors mention them. History even goes so far as to show that one of them Ibn Amran, highly esteeming the *Nux Moschata* for its medicinal properties, loses his head by a too liberal use of his spice-box.

Some hundred years later we find the *Karoun Aromatikon* having made its way into the pharmacopoeia of Europe, and since then it soon spread over different markets. Its price remains excessively high on account of the charges incurred by the route used in those days for all Indian produce.

Carried from the Moluccas to Aden, crossing the desert land-route and following the Nile down to Alexandria, it is easily understood that heavy charges enhanced the price of a product which had to change hands so often before it could so much as reach one of the European gates of Eastern trade, whilst these themselves were not at all reluctant to make money out of every *open door monopoly*, which by chance or cunning had fallen into their hands.

About 1400 Genoa and Barcelona are the principal markets for spices. But the attention of the North of Europe as well has been directed—though on a lesser scale—to those far-away countries, visited by Marco Polo. Others follow him, describing the marvels of their visits to Asia, in colours to bewitch even the most sceptic. A rage for spices springs up in Europe and continues through the century.* Direct shipping trade with India begins here.

To the Portuguese falls the honour of having first traded into the Far East. In 1511 Albuquerque visited Banda. A few years later the Spaniards under Charles V. went out to the Moluccan Archipelago. The interests of the two nationalities collide. Then follows war, which ceases however for the moment, when the Spice Islands are sold by the Spaniards to Portugal. Columbus discovers the New World and the Holy Father settles everything in peace, reserving the West to the Spaniards and the East to the Portuguese. Under the reign of Philip Portugal being united with Spain, the world might have come to peace for ever, but for the excluded North interposing its veto. The rage for spices kindles a fire which will last for centuries, dividing Europe and bringing war as well here as in the unhappy Indian territory, endowed by Nature with the trees that bear gold.†

Profit had been heaped up, and continued pouring into the lap of the daring Portuguese and Spaniards, but profit won so freely, soon called opponents into the field. Rivalry, the ever watchful stimulus of trade had opened the eyes of the North. Yet what most of all caused these Nations, especially the Dutch, to compete with the Portuguese and Spaniards in India, was the unlucky move by which the latter closed Lisbon against the Dutch mercantile navy.

Seeing its usual store of supply cut off and its second-hand profit endangered, Dutch Commerce took the alarm and at once made efforts to meet its opponents on an equality.

In 1595 the first Dutch vessels are sent out under Corn. Houtman, to trace the unknown path to India, risking their poor ships round the Cape of Good Hope. Their enterprise is crowned with success. Corn. v. Neck, Warwyk, and v. d. Hagen. follow. In 1599 Banda is visited by Jacob Heemskerk.

The *Oost-Indische Compagnie* famous for its rapid development and unprecedented display, commences its operations in Indian Waters. Soon the love of monopoly excludes all others from the field of commerce. India like Europe is disturbed by war amongst the Nations, trading in those days sword in hand and the guns loaded on board their merchant-ships.

In the Moluccan Archipelago the foes of the Hollanders generally make common cause with the natives, who are shut out from the profitable trade of spices themselves. This constant struggle however does not disturb the Company's sphere of influence, on the contrary it leads to a

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* St. Johns.
† Lans.

permanent form of administration, which reaches its highest pinacle when Coen, one of the boldest and most clear sighted governors that ever served the Company's cause in the East Indies, proclaims Batavia the centre of the Dutch forces.

Holland had become one of the first powers in Europe; but the wonderful possessions of the Dutch East-India Company in India are of a strictly private character, governed by officials controlled by the Company only, and the State itself has not the slightest intention to join the distant isles to the Mother-country, Monopoly in the Moluccan Archipelago is all that is desired, and the Company's officials know perfectly well how to safe-guard its interest in this respect.

We need not enter into the Company's struggle for self-preservation which on many occasions might have been deemed entirely hopeless, if the opponents in Europe had been fully possessed of the facts which have since been brought to our knowledge. If however we may pass in silence the details of war between the Dutch and other European nations, we may not wholly do so with regard to the struggle between the natives and the Dutch in India, which fills many an inglorious page in the history of those days.

As a rule writers of the present century have criticised the policy of the *Oost Indische Compagnie* in a most severe way, especially with regard to the hard measures carried out in the Banda islands, and we shall certainly not defend any of these unscrupulous acts which were forced upon the Bandanese in order to maintain the Monopoly of spices in Indian Waters.

It is clear however that in judging of past times, the critic has to bear in mind first of all that in the beginning of the 17th century the ideas about humanity in war were radically different from what they are now. Secondly, equity should allow for many an act of bloodshed provoked by the constant treachery of the Asiatic tribes, seemingly eager to grant any amount of privileges, solemnly pledged when they considered themselves compelled to submit, but as eagerly scouted, as soon as they thought the moment fit to do so, either on instigation or by instinct.

No doubt the self-evident want of understanding of two races so different in character, religion and tradition, must be taken into account when judging any shortcomings on either side which, originating in the slaughter of the isolated Dutch forces and constant mutinies, ended in a complete submission of the monopolised islands and almost wholesale massacre of the Bandanese in 1622.

Whatever we may have to say in these matters and wherever our sympathies lie, there is this testimony which speaks clearly in favour of the Dutch rulers, that when in later years the political fall of Holland caused the nation to neglect the Indian Archipelago, the natives complained about their being left to themselves and protested for fear of being wholly abandoned by those whom they had learned to consider their regular masters.

When in 1796 the Spice Islands became English for the first time (they were brought under the English flag for another short period once more in 1810), the natives still continuedto consider themselves as subjects of the Dutch and they hoisted even then the Dutch flag on all festive occasions.*

This single fact appeals to every impartial critic. It exonerates neither the rash acts of cruelty nor the merciless despotism exercised by the Conquerors, but it goes far towards excusing them.

What we needs must blame looking back over so many years is the general blindness of those who, pretending to govern India on sound commercial principles, did not even see that the miserable Monopoly was the cause of endless war and should in the end drain Indian resources.

As unwise as the man in the fable who killed the goose with the golden eggs to get all the profit at once, the rulers of India, alarmed at the number of trees "*that bear gold*," rashly cut down so many that they drove the people away and wealth with them.

By restricting the cultivation of nutmegs and mace to *Banda Neira*, *Lonthoir* and *Ay*, the monopoly caused a great deal of injury to the Moluccan Archipelago. By compelling all the produce—nutmegs and mace—to come to Europe, it crippled the trade, which had ever found its natural outlets in Asia, Severe control and constant vigilance of course could do something to maintain the monopoly in the days of the Company's utmost glory, but it is easily understood that against the unnatural law, smuggling was ever on the alert for an opportunity to detract the much cherished spices from the Company's stores either with or without the connivance of the Company's own officials.

Though estimates differ it is not at all inadmissible that over one-fifth† of the yearly Banda produce of nutmegs and mace was diverted by smuggling in Indian waters, and such notwithstanding the excessive punishment inflicted upon the offenders.

Besides the regular loss caused by smuggling, there was another which very often swallowed the profit for years, viz., the *volcanic eruptions* alternating with storms or parching drought, causing heavy loss of full-bearing trees, whilst moreover the scarcity of hands in years of abundant crops is met with in nearly each of the volumes, which deal with this part of the Company's arduous administration.

If we could separate the Moluccan administration from the complex of the Company's extensive household reaching South as far as Australia, and Eastward as far as Japan, including the stations at the Cape, in Ceylon and on the Coast of Malabar, a deficit would be shown by many years, that were considered extremely profitable by the shareholders in former days.

Leaving aside the years of enormous profit in the Indian trade, which may be reckoned to have lasted till 1693, there remains a period of more than one Century when the returns hardly cover the expenses, nay even entail a loss, and we may safely state that the Moluccas were for a good deal the cause of the disastrous end of a management, commenced under the auspices of inexhaustible wealth.

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* George Windsor Earl.

† La Perouse, Crawford.

With a staff of a good many more than 19,000 Europeans in India(1770) of which nearly 3,300 in the Moluccas, the Company's Administration must no doubt have been far too intricate to allow many, either to appreciate its real state, or to foretell its future career but for grave blunders on its part.

Involved in every war which threatened Holland, bound to assist the State either with saltpeter and ships or money or both, the *O. I. Compagnie* had of course more to do than simply to administer the Indian territory. Her greatest fault was the waste of produce ordered to be burnt in Amsterdam, or destroyed in the Moluccas, conforming to strict orders from the Company's headquarters. Their eyes were closed against everything that should have been taken as a warning to break with the cutting down of trees (*hongi-expeditions*) and slavery. They were wilfully closed against everything that savoured of free labour and free trade, and they would remain so even for many and many years in favour of the old prejudices. When in 1798 the Company's bankrupt household showing a deficit of 120 millions was handed over to the State, the government did not know how to act better than to continue the Monopoly of Spices, which even managed to drag on its miserable life till 1870.

We need not wonder that, whilst in Europe at the end of the 18th Century the Revolution changed everything, the ideas in India moved very slowly only. Of course there were some persons in India and even amonst the highest officials that pleaded for a complete opening up of the islands for trade, but the advice they sent home did not find much favour. Under the administration of Holland as well as under that of England, proposals concerning the Banda Isles to this effect met in the Mother country with too little knowledge of India's wants.

When in the second period of English possession of the Banda-group (1810—1816) Governor Raffles declared himself an absolute foe of monopoly and asked the English government to sanction a change, he complained that the Bandanese knew just as little of England as the English knew of the Banda-group. If on commercial principles—Raffles wrote—it may be deemed advisable that the spices shall be collected into few hands, let the gardens or their produce be farmed out. Let the East-India Company or any Association of Europeans enter into the speculations, but let the British government preside,

This advice was quietly passed by. England did not take any real interest in the Banda-group itself, except that its produce should be directed to England instead of to Holland as before. When the *Treaty of Breda* in 1816, once more restored the Banda possessions to Holland, no material change whatever had been made in their administration.

Mercus, the Dutch Governor-General, after his visit to Banda pleaded for the abolition of the Monopoly. Van den Capellen, who visited Banda after him in 1824, though much impressed with the desolate state of the impoverished islands, did not dare to abandon the venerable monopoly system sanctioned by a usage of 200 years.

Some change however had been introduced. In 1819 slavery [slaves had been emancipated nominally in 1812 under the English] had been definitely abolished in the Moluccas by the Hollanders, and though for the moment the difference between slaves and "adscripti glebœ" (*perkhoorigen*) is still less essential than it pretended to be, this first reorganisation was to smooth the way for broader views of lawful trade also.

In 1853 the port of Banda was opened to the flag of every friendly nation. However as the produce was still monopolized by the government, merchantmen knowing that they would not find any cargo, of course did not call.

In 1862 the expeditions of extermination (*Hongitochten*) were abolished, and for the future the young nutmeg trees are allowed to thrive in any of the islands of the Moluccas. Very likely the unforeseen rise of Penang and Singapore as Spice-markets, supplied by the produce cultivated on English territory (Malacca) helped to open the eyes at last. Only three years later the first parcel was sold in Banda Neira in free auction.

The destruction of the nutmeg by disease in the Straits in 1866, which made prices go up till 1871, fortunately did not alter the liberal policy of the Dutch government. On the contrary the government now fully convinced that the Moluccas wanted the stimulus of free trade, urged the estate owners (*perkeniers*) to make themselves independent from the monopoly system. At first few of them seemed to appreciate the change, being far more willing to continue their improfitable connection with a buyer as the government, instead of being thrown upon the open market. With the prices ruling very high just then, the energy pent up so long, seizes from a few examples the profit which can be made. One after the other of the planters made himself free, and on the 1st of October 1873 at last every vestige of the monopoly of spices had been buried in the past.

Applications for opening up *Rhun* and *Rosengain* reached the government.

Already the next year the *Colonial Reports* of Netherlands India stated that the abolition of the Monopoly of Spices had proved a boon, having awaked more interest in the cultivation, both labour and money being supplied on a larger scale than before by the planters in the Banda Islands.

Since then the free cultivation of nutmegs has not always been so profitable, and especially of late years competition in every part of the globe, combined with low prices have put the energy of the planters to a severe test.

It may be safely asserted, however, that as the Banda nutmeg and mace still enjoy the highest reputation in the market, the care bestowed upon their cultivation as well as the large sums spent on it, must ensure a reasonable profit. In fact there are signs that prices will improve, cultivation having nearly reached its maximum in Banda. The days may be over when the produce of Banda was synonymous with the "trees that bear gold"; its gardens still bear the promise of wealth ready to fall into the hands of those who know to cultivate well this part of the wonderful East Indian Archipelago.

II.—CULTIVATION.

NUTMEGS AND MACE IN THE BANDA-GROUP.

A glimpse at the map of the Banda-group makes it clear that the islands are remnants of

a volcano, one-half of which has sunk beneath the surface of the water. Of this volcanic formation there still remains one active crater the *Goenong Api*, literally Fire-mountain, which ever keeps its neighbourhood in awe of new eruptions, though fortunately the days of destruction which marked the 16th and 17th Century have been great exceptions in the latter part of this century. The Bay of Banda itself is part of an extinct crater; over the whole Archipelago we meet with the same geological formation. Nevertheless, danger has always been overlooked in the Moluccas by the Natives as well as by the Conquerors, owing first of all to the much-prized spices, with which Nature gifted the islands, but no doubt also to the charming impression which the islands, and especially *Banda Neira* and *Lonthoir* leave upon everyone who visits them. The aspect of the islands simply surpasses everything which tropical vegetation offers in the usual way. In the *Guide through the Archipelago* issued by the Royal Mail Packets Co. of the Netherlands India, the pages 186 etc.* give a most picturesque description of the voyage from Amboina to the Banda-group as follows:—

"As a crowning effect of the trip to the Moluccas, as a finale of all the incomparable natural phenomenae between which the steamer smoothly conveys its passengers every night, the silhouette of the Banda islands with the high Goenong Api rises above the brilliant easterly horizon on the morning after the departure from Ambon. Everything is delicate and fine in this enchanting group of islands, which reminds us of nothing so much as of scenic decorations on a gigantic scale. The sea is more intensely blue, the green is deeper and more brilliant, the yellow and grey stripes on the smooth slopes of the ash-cone are more marked, the clouds of morning are more etherial than anywhere else.

"It is still early in the morning when the steamer runs past the islands of *Rhun* and *Ay* on starboard, whilst on the notherly horizon the rocky masses of Swangi loom up, but by the time the steamer reaches the harbour, we are well on in the morning. The rapture which the lover of nature experiences on entering this unique bay baffles all description. On passing between the steep cliffs the steamer skirts the coast so closely that one can almost grasp the impending branches of the dense forest, when suddenly we find ourselves in a glassy lake enclosed by high precipices, from which with hardly any shore at its foot the Goenong Api rises its gigantic cone. But even more striking than this threatening volcanic funnel is the view straight ahead of us, where we discover a little town built against the slopes of a verdant rocky island, above whose white houses and terraces a mediæval castle towers high."

The European dwellings in Banda testify by size and condition to the welfare which the cultivation of nutmegs has spread amongst the planters. They are however far from making an impression of luxury. All the large houses are built of bricks, but very low, reminding us of the danger of eruptions [the one of 1852 caused serious damage to all the buildings].

According to the same authorities the aspect of the nutmeg gardens is perfectly unique, yea we may fancy ourselves in the holy woods of which the poets sang.

"Not a trace of wilderness and yet everything grand and luxuriant. The eye glances along an unintercepted view of the magnificent nutmeg trees with their crowns of foliage of shiny dark green leaves between which the dead-yellow fruit are hanging in abundant profusion. The dark red mace glows in the recesses of the opening fruit. And over these dense orchards huge *canary-trees* move their dark green crowns in one interwoven protecting leafy roof, borne as on columns by trunks of a girth such as hardly ever seen in Java."

The interior arrangement of an estate house is extremely simple: a front-gallery, inner-gallery or hall, into which open all the private rooms, and a backroom which is practically the sitting-room. Society life in Banda is of course rather monotonous, one of the principal diversions of the colonist and his family being the tropical sky-gazing (*klimaatschieten*). Meanwhile a reception-day on the estate is a very pleasant event. The invited guests meet at noon at the profusely provided rice-table, which is followed by the siesta. After the usual Indian ablutions, the guests meet in full dress, pumps and gloves being "de rigueur." Supper follows at 7 o'clock and the well-spent day is finished up with a dance, varied by theatrical or musical entertainment. Families are usually very large, ten to sixteen or more children being no exception. In religious matters the colonist is exemplary tolerant. A special trait of the colonist's character is his pronounced love of the House of Orange, chiefly dating from the festive visit of the late Prince Henry, the happy memory of which is revived on every occasion.*

Another Indian specialist† describing the nutmeg gardens in Banda says: "The agreeable scent which is wafted from the wood invites us irrisistibly. The high canary-, warringin-, and teak-trees act as a protection against heavy showers and gales for the conical nutmeg trees, whose foliage is formed by pointed leaves hanging down from branches shooting out regularly. Between the shiny foliage sparkles the ripe open fruit of which the dark brown nut is the kernel, whilst the bright-red mace envelopes the nut as an elegant network. Occasionally we meet in the wood with bamboo bushes and other jungle vegetation. Sweetly blows the cool air, invigorating and bracing is the scent of the nutmeg, whilst the wood echoes with the merry voices of men and women gathering nutmegs, and children picking canary-nuts, mingled with the various sounds of the cooing nut-pigeons (*manoek faloer*), parrots, the Indian nightingale (*baikolie*), the canary-yellow *karajamoe*."

A peculiarity of the nut-pigeon inhabiting the Archipelago is that they swallow the fruit bodily and discharge the nut whole and undigested. This curiosity, which no doubt leads to the distribution of the plant, was formerly connected

* Dr. D. F. v. Bemmelen and G. B. Hooyer.

* v. d. Linden.
† Prof. v. d. Lith.

even with its sex as shown in Vogels' remarkable passage*: "If the bird that drops the nut is a male, the tree growing from it will be a male too; if the bird is a female, the tree will be a female as well, whilst if the bird happens to be still a virgin, the tree that grows from the swallowed nut will be one of the best in the woods.

Whilst nature produces 100 male against 100 to 200 female trees, it is a fact that only the females yield fruit. On the whole the latter bear fruit when ten years old, but their produce at that age is still small. In the years immediately following, the produce increases rapidly, gradually again more slowly, until the highest point of production is reached between the 20th and 25th year, continuing, undiminished during 25 years. Only then, about its 60th year a decrease may be noticed. Many trees however reach a much greater age, some of them are said to complete a century.

The nutmeg trees bear blossom and fruit without intermission, in every stage of ripeness, and so the nuts may be gathered all the year round. The greatest abundance however falls during the months of July and August.

The nutmeg itself is the kernel of the fruit, which is pearshaped, of the colour of a peach and cousists of four parts; the outer fleshy part, then the membranous substances, covering the shell of the nutmeg and known to Commerce as mace, then the shell, and finally the kernel or actual nutmeg.

The greatest care is required in gathering and handling the fruit. Twenty-four hours after the opening of the fruit, a sure sign of its ripeness, the nut will drop to the ground, thus injuring the mace-network and deteriorating its proper quality as its lying on the soil makes it apt to become wormy. On the other hand the closed fruit may be still unripe, and knocking these down would be highly unjudicious.

Work commences at 5 o'clock in the morning at the ringing of a bell, when men, women and boys and girls over 16 years, go out into the woods, armed with the *gaai-gaai*, a long stick with a prong at the end to break off the ripe fruit and a basket to carry the collected nuts.

The wood is the all in all to the labourers. It is his place for work and recreation. It is his club and even the spot where the young man seeks his future wife when the overseer is out of the way, notice of whose approach is kindly given by the friends of the young couples imitating the call of the nut-pigeon as a danger-signal.

Apart from the romantic side of these proceedings, the practical advantage becomes evident when we know that love-making contributes greatly towards the rapid filling of the basket, the boys helping all the pretty girls most assiduously, in order to secure for them the premium awarded for extra-diligence, (a practise which has followed up the rottan used in the days of Monopoly).

While the owner may thus be profiting by the romantic disposition of his young staff, it is quiet on the cards that his overseers are not overanxious to intrude where the voice of the *manock faloer* is heard. The only drawback of this arrangement is that the boys do not regard the boundary of the estates too scrupulously, thus filling with the produce of one estate the baskets of the other. We cannot vouch for the veracity of the statement, but it is asserted, says Mr. v. d. Linden, that an estate-owner who one year happened to engage an unusually attractive female staff, thus saw himself unexpectedly rewarded with a superabundant crop, whilst on the neighbouring estates many complaints were heard about the scarcity of fruit.

Work in the woods finishes at three in the afternoon when the collected fruit is delivered at the *pagger* where the warehouse, drying-house and other out-houses are located. On entering, all the pickers, males as well as females, squat down in the open gallery to separate the ripe fruit from the unripe (*kerangs*) and portion them out in little heaps. After the inspecting and sorting of the fruit, the nuts are taken to the drying-shed (*rookkombuis*) where a low fire is constantly kept smouldering. Here the nuts are spread out and dried on a second flooring of split bamboo (*para-para*) constructed at not less than 12 feet* above the fire on the floor. After about 6 weeks, during which time the nuts are repeatedly turned over, they may be considered dry, which is heard when they begin to rattle.

In the drying-sheds the nuts should not be overheated, merely to accelerate the process of drying them, as they are very rich in oil (35%) which would ooze out. The temperature in the drying-sheds varies as a rule between 35° and 40° C. (95° till 104° Fah.), care being taken to avoid fluctuation, a precaution which explains why the walls of the drying-sheds should be so thick. A temperature above 45° C. is considered injurious by Dr. Janse, the eminent scholar who was sent out in 1897 by the Dutch Government to institute a special inquiry into the growth of nutmegs and its requirements.

The smoke which formerly was looked upon as necessary, is not essential; the smouldering fire being preferred because it assures the best, *i.e.*, a slow process of drying. A change in the venerable, old proceeding was repeatedly urged. Meanwhile, Dr. J. remarks that the use of machinery is not free from objections, the nutmeg being an article which is valued according to its "*face*" value, necessitating the greatest care for the preservation of its outward appearance.

When dried too quickly the nut cracks, when exposed to an excessive temperature it shows spots in consequence of the oil finding its way out.

When the nuts have been sorted they are limed, which is not done to rob the nut of its productive power as people used to think in the days of monopoly, in order to prevent cultivation elsewhere, but only to safeguard the nut against getting worm-eaten, or in case a worm should have got in already, to fill up its hole and kill it.

There are two systems of liming, the wet and the dry. In the dry process the nuts are treated

* Warburg.
† v. d. Linden.

* Van Gorcum (*Colonial Museum*, Harlem.)

with dry lime-powder either by rubbing them between the hands or shaking them in barrels. In the wet process the nuts are thrown into the newly slaked lime upon which they are spread over the floor to dry. Dr. Janse mentions having seen on his visit to Banda that small basketfuls of nuts were dipped into the slaked lime and the nuts heaped into little piles.

In order to ensure the best appearance for the mace, a careful treatment is equally required. It loses of course when dried the bright purple hue, which it possesses in its natural state, but the orange colour should be as vivid as possible.

In contrast with the nut, mace contains only 7 to 9 per cent of etherial oil, but it holds an abundance (23 per cent) of aromatic balm.

Immediately when the mace is loosened from the nut, the fresh substance is spread out during the night on matting or flat wickerwork. When the weather is fine it is cured in the sun in a few days. During the process of drying it is trodden flat in order to facilitate the packing and avoid its breaking when in a perfectly dry state.

The only work on the estates now remaining is the packing and forwarding.

We might now pass to a review of the nutmeg and mace trade, taken into Europe and its principal emporiums Amsterdam and Rotterdam, but we consider it necessary first to refer to the places of inferior produce and the diseases to which the plant is subject outside Banda.

ATTEMPTS TO ACCLIMATIZE NUTMEGS OUTSIDE BANDA.

When in 1839 the Government gave its sanction and assistance to transplant the nutmeg trees from Banda and Amboina to the other parts of the Dutch Archipelago, cultivation began to spread and the plant was also introduced into *Minahassa* (North Celebes). What the natives produce in *Ambon* is of less importance than that in Minahassa. Its cultivation dates especially from the great destruction caused in the Banda Islands by the gale of 1778. Cultivation of nutmegs in *Ceylon* dates from 1798, that around Singapore from 1819.

In the French *Mascarenes*, off Madagascar, nutmegs were imported about 1770. Though at one time the cultivation raised favorable expectations, it has since dwindled into nothing, the cyclones having been the chief obstacle.

Even poorer results were achieved on the plantations in *Madagascar* and in *Zanzibar*.

Lately an attempt has been made to acclamatize the nutmeg tree in *German West Africa*, but thus far in the botanical gardens only.

In South America, *French Guyana*, where the plant was introduced by the French in 1772, it did not flourish. From there it was brought to *Brazil* in 1809, where it is found even now in solitary specimens only. Also in *Dutch Guyana*, *Venezuela*, *Mexico*, the *West Indies* and on the *West Coast of South America*, the nutmeg trees have never yielded a produce of any importance. Though during a short period the English plantations in *Trinidad* seemed likely to thrive, the ultimate success was poor.

POOR RESULTS OUTSIDE BANDA.

Everywhere in these regions, either the winds or the unforeseen continual droughts have disillusionised the planters there, and after all the naturally appointed place for the nutmeg produce of the world remains in Asia, and especially in the Moluccan Archipelago, where it has found for hundreds of years, together with the soil suitable for the plant, the favourable climatic dispositions without which the "trees that bear gold" cannot be expected to yield ever-abundant crops.

DISEASES OF THE NUTMEG TREE.

Like every other plant of tropical culture the nutmeg tree is subject to many diseases. Of these we may name :

1. *The Bark-disease* which without any previous symptom destroys part of a plant, sometimes in a day. Such a tree may be saved by cutting away the affected parts. The disease generally attacks the stems, it being a great exception that the branches alone are attacked. However great the ravages may have been elsewhere even destroying the gardens entirely, as in 1860 round Singapore and Penang, the bark-disease has never shown itself in the Banda islands.

What is indeed bark-disease says Dr. Janse, but what Dr. Warburg has treated as a separate malady, is the *white ant-plague*. White ants are not injurious to sound trees, but on the least symptom of decay in a tree, they muster in their thousands and the affected tree is hopelessly doomed. They seem to have a particular aversion to hog-dung, but to have rather a predilection for cow-dung.

As another case of bark-disease Dr. Janse mentions the *root fungus*, which is practically the same disease only appearing below the surface.

2. *The Premature Opening of the Fruit.*—Of the losses which a planter suffers regularly every year, the premature opening of the fruit may be considered the principal cause. In this case the nutmeg is either totally unfit for the market or it gets wrinkled. In bad years the loss owing to this cause amounts to half or even three-quarters of the crop. It is known either as *boeka poetih*, *boeka moeda*, *pala reboes*, *boeka massaq* or "*Kerang*," when the premature opening is caused by a fungus.

3. *Star-spotted fruits.*—This disease also brought about by kind of fungus according to Dr. Janse, is classified by Dr. Warburg as *nutmeg cancer*. It is rarely met with in Singapore but raged severely in Penang.

4. *White thread cancer* (Benang poetih), *Black thread cancer* (Benang hitam) are diseases which specially attack the leaves and branches.

5. *Parasite plants* (kajoe menoempang) and *Animal Parasites* (Boor-boor, gaai, etc.) as well as *Blight* and *Fieldmice* are amongst the plagues to which weak trees are more or less exposed.

Though we cannot enter into further details which would ask a good many pages, this condensed enumeration of plagues and diseases easily accounts for the disastrous results that have overtaken sooner or latter the cultivation of nutmegs outside the Indian Archipelago.

ESTIMATE OF THE WORLD'S PRODUCE OF NUTMEGS.*

IN TONS (1000 K.G.)

I. *Netherl. East-Indies.*	1815	1817-19	1820-29	1830-39	1840-49	1850-59	1860	1865-74	1875-84	1885-94	% of Total.
Bandagroup ...	241	195	244	220	297	317	536	470	580	600	37·4
Moluccas ...	—	—	3	12	12	45	62	70	140	160	10·—
Celebes ...	—	—	—	—	—	—	—	48	180	150	9·4
Sumatra ...	—	50	50	20	15	37	43	150	240	340	19·6
Java	—	—	—	—	—	—	30	30	60	80	4·9
Total Neth. East Indies ...	241	245	297	252	324	399	671	768	1200	1304	81·3
II. *Others.* ..											
Penang ...	—	—	—	26	86	263	391	—	140	} 200	12·5
Singapore ...	—	—	—	—	15	120	200	—	—		
eylon ...	—	—	—	—	—	—	—	—	25	—	—
West-Indies ...	—	—	—	—	—	—	—	10	10	100	6·2
Total Outside Neth. E. Indies	—	—	—	26	101	383	591	10	175	300	18·7
Total World's Produce ...	241	245	297	278	425	782	1262	778	1375	1604	100 %

*According to statistical data compiled by Dr. Warburg.

GOOD AND BAD YEARS ALTERNATING.

Banda-Crop: According to Valentijn the total produce reached in 1634, 666,747 lb. (Amsterdam) *nutmegs* and 183,720 lb. *mace*, During the decade 1662—72 the yearly produce is estimated: 458,951 lb. *nutmegs* and 117,229 lb. *mace*. In 1710 Siberg puts it at 704,000 lb. *nutmegs* and 176,000 lb. *mace*. In 1778 the total produce sinks as low as 30,000 lb. *nutmegs* on account of a disatrous gale. The years 1785—1792 give poor results 22,459 lb. *nutmegs* and 7,504 lb. *mace*. In 1809 Daendels shows better results again 350,000 lb. (first estimate) 475,000 lb. (final estimate) *nutmegs*. In 1816 volcanic eruptions bring the figures according to Dr. Bleeker down to 127,239 lb. *nutmegs* and 31,809 lb. *mace*. The following years show better results, Especially 1860 proved a very good year, the produce being then estimated at 1,072,765 lb. *nutmegs* and 275,586 lb. *mace*. In 1867 the yield is only half of that in 1860. The next years show rather abundant crops and especially 1876 with 1,341,000 lb. *nutmegs* and 382,000 lb. *mace*. But in 1878 on account of excessive drought the crop is vevy poor once more, the yield being 464,000 lb. *nutmegs* and 164,000 lb. *mace*. Next year the results are much better, and 1881 is again a year with a very large crop 1,322,000 lb. *nutmegs*. In the following years the crop is good and repeatedly (1887, 1888) even abundant. In 1889 the crop is poor again 566,000 lb. *nutmegs*; whilst from the years after that up to 1895, that of 1893 beats the record with the large crop of 1,400,000 lb. *nutmegs* and 352,000 lb. *mace*.

The fact that good and bad years alternate at unforeseen intervals on account of drought or territorial (volcanic) disturbances, is shown by the foregoing list of figures.

(*To be continued.*)

THE GOLD MINES OF INDIA.

It was stated in a previons number of *British Indian Commerce* that coal and iron were not, by any means, the only minerals which abnnded in India. The next to them in practical valne is gold, and as the India Government has finally decided to adopt a gold currency and standard, the Indian gold mining industry has acquired greatly increased importance. At what historical period the searching for gold was first attempted in India is a matter of some interest. The gathering of this precious metal at and near the surface was doubtless begnn in India, as in other countries, at a very early period. It was stated by Mr. S. U. Syed Ali Birgrami, a distinguished native metallurgist, in his essay on the "Iron Industry," that a human skull was found, in the Wundli Gold Mine in the Deccan, 210 feet below the surface. The ancient native miners in India did like the Romans in Spain, most skilfully work out the surface gold, but were stopped from going deeper by the influx of water. In the recently published book on "The Gold Mines of the World," written by Mr. J. H. Curle, who has visited nearly all the mines of every country, the author says: "In regard to India, several of the world's greatest mines are found here." This is very high testimony. As the mines in India which are now being chiefly worked are those of Mysore, some of which have proved to be extraordinorily prolific, and those in the Nizam's territories, namely, Wundali and Raichore, Mr. Crule appears to have been greatly impressed with their richness. The former working of the Mysore mines was doubtless profitably carried on by Tippoo Snltan and his predecessors who, it has been historically recorded, had a vast aconmnlation of golden treasure which had been extracted from the Mysore mines when he ruled the conntry. A great portion of the treasure doubtless fell into the hands of his captors when he was defeated by the English forces. These mines were probably then worked by slaves, but up to abont 1870-71 they appear to have laid dormant or nearly so. Previous to that time there were always native searchers for gold, in and near the Wynaad. There were the "Pannirs" and "Korumbars," two native

races, who washed and dug for gold, obtaining about four annas worth each per head a day. In other parts of India, as well as Mysore, there were always searchers after precious metals. In most of the streams on the western coast of India, gold is found associated with black magnetic iron sand. The iron sand is used in native iron furnaces, or as dust for spreading on written documents to dry the ink instead of using bloting paper. On the seaside, near Beypore and Calicut, there is always an accumulation of this precious black sand, and with it are particles of Gold. The chloride of sodium in the sea water decomposes the impurities with which the gold is associated. In Queensland, Australia, on the sea coast, where the large rivers empty themselves into the sea, after heavy floods which cover the low swampy lands, a similar muddy, black sand accumulates, and is very carefully collected, with profitable results, in the shape of fine gold in considerable quantities, and of the highest value because of its purity. Between the coast of Beypore and the Wynaad Hills on the low lying ground there are many traces and remains of ancient gold mines once worked, but now abandoned for no other apparent reason than the want of enterprise. The native minors could only go down to the water-bearing strata, where they would be drowned out for want of drainage appliances, which is no longer a difficulty. The searching for gold mines, though no exact rules can possibly be laid down, is not, however, so very complicated or mysterious an occupation as may by some be supposed. There are certain geological and mineralogical, as well as topographical rules, which, if carefully followed, will indicate the possibility of gold being discovered. Such were the data which enabled the late Sir Rhoderick Murchiston to indicate that gold would probably be found in certain parts of Australia and South Africa, though its existence was very well known beforehand in both cases, but the technical rules upon which Sir Rhoderick built his theory were strictly correct.

As regards the Indian gold mines, the late Sir Richard Owen, Director-General of the Natural History Museum, owned a coffee estate in the Wynaad, which, during the ten years of his owner-ship, had cost him a thousand a year. Getting tired of his bad bargain, and his canny Scotch manager having retired and set up an estate of his own on his accumulated savings, the Professor wished to sell the property, and on transferring it to the buyer, he said: "If you will examine the rivers on the estate you will find gold"; and gold was actually found; but when the samples were shown to the leading merchants in Madras they attached no importance whatever to the discovery. That was in 1862, and it was not until 1875-76, when the India gold mining mania raged, that there was a rush for mining properties, and fancy almost fabulous—prices were offered for mining rights in the Wynaad. Unfortunately, too often and too freely were such prices paid, without any guarantee that the properties contained paying gold. Amongst other properties was that of Sir Richard Owen, for which £1,500 was originally paid to him; for this the modest sum of £100,000 was asked, but not obtained. The surface outcrop of the lodes of quartz did, neverthless, yield 11 dwts. of gold per ton, worth 40s. From 1875 to 1885 a great number of Indian gold mining companies were started, with an aggregate capital of many millions sterling, and very exorbitant prices were asked and paid for mining rights. Large fortunes were acquired by promoters and speculators, but when the boom was over most of these companies fell into the hands of "wreckers," and were wound-up. One company, for example, which had bought its rights for £40,000 cash and some fully paid-up shares, had no more money to send out a competent agent to test or work the mine, and it had, therefore, to be wound-up, and the right abandoned. Yet there was clearly traceable on that estate six or eight good quartz reefs, which assayed 10 to 12 dwts. of gold per ton, worth 40s.

This was a capital period for retired Indian Army officers and civilians, who rushed to the front as directors, managers, and experts, with about as much knowledge of gold mining as a cow (or say a calf) knows about the differential calculus.

There are very few gold mines put upon the market which could not yield a good return for capital actually expended in working them, but when two-thirds of the capital is taken as purchase price for the same, the returns must be very poor indeed, except in very exceptional cases. A gold or any other mine should never yield less than from 10 to 20 per cent., for, of course, as the mine is worked, it becomes of less and less value till exhausted. The original cause of the *furore* in the Indian gold mines was that one of them, the "Alpha," which belonging to a large mercantile firm in Bombay, which failed with debts of over £2,000,000 sterling and ruined a Glasgow bank, was as extravagantly over valued by the liquidators, who declared the mine in India would return all that was due to the creditors and the bank as well. On the strength of this statement there was a rush of Indian gold mines.

It is a remarkable fact that 80 per cent. of the gold of the world is obtained from the beds of gravel, which contain small particles of fine gold, worth not more than 10d. to 2s. 6d. per ton of stuff. These gravel beds exist in many countries, but Russia, California and Australia are the most famous. Such deposits fromerly existed in Spin, whence the Romans obtained one million sterling's worth of gold annually. The remains of their stupendous mining which still exist show that they were worked by hydraulicing, as in Calfornia, and they surpass anything done in that country at the present day. There are doubtless, similar deposits in some part of India which are as yet unexploited. The most certain indication of the existence of gold is when it is found in the gravel of the various streams, as in the Wynaad; and the quartz veins, which exists in the Silurian schists, in the same locality precisely as gold exists in North Wales. It has, however, been well ascertained that the presence of "Trap Dykes," such as occur on the western Coast of India, when they are sound traversing the schistose rocks, that *dislocation* or contact apparently creates the quartz lodes which contain gold. These lodes almost invariably run north-east and south-west, the gold being secreted in small veins and pockets, sometimes visible, but more frequently not. This gold is often very pure, but is more generally associated with silver, copper, zinc and iron pyrites; and it requires considerable experience and familiarity with mineralogy, as well as chemical knowledge, in order to determine not only the presence of the gold, but also the value of the ores. Very poor ores can now be profitably reduced.

The gold at and near to the surface in India has, of course, long since been gathered. Deep mining has been limited by the accumulation of water in the pits, but in many parts of India gold has been, and is still, obtained in some of the rivers, as from the Sona river (Gold River), which comes out of the Himalayas in Northern India. The gravel is still washed for gold to a very limited extent. Much of the fine gold work done in Delhi by the sonars (gold smiths) is made from gold brought across the Hiamalayas from Thibet, in the shape of smal ingots about the size of the finger. Traders bring this over with goat's wool and borax, which they exchange for wheat and warm woollen clothing.

It is a curious fact that true granite has never yet been found in India. Trap and schistose rocks are plentiful, some of them like stratified granite, and frequently so called, which is a misnomer. It is in those schistose rocks where gold is found, and these are plentiful enough from the Himalayas to Cape Comorin. Were these gold mines properly and inexpensively worked, they would yield a fair profit, if they were not overweighted with capital, too often the custom nowadays. To carry on a gold mine from an establishment in London 7,000 miles distant, reliance

must be entirely placed upon the energy, skill, and integrity of an agent. India is not the country for enterprising and energetic Colonists in the usual acceptance of that term. As to the best mode of dealing with the mines, it has been suggested that they should be worked by convict labour. This was the custom with the Romans in Spain, where the descendants of these people still exist as a separate race, and still wash the rivers for gold after 2,000 years. The difficulty of dealing with convict labour would be the setting of task work, one of the best stimulants to Indian as well as other workmen. One the other hand, finding occupation for convicts without encroaching prejudicially upon the legitimate tradesman has been a question in India as well as other countries. Gold-mining would not compete with the ordinary tradesman prejudiciously. Gold-mining is not, as a rule, a profitable occupation. In California and Australia, in the best of times there, if the results abtained were divided equally amongst the successful and the falures, it would not give a fair day's pay for the labour, and if all the gold mines of the world belonged to one syndicate or compauy the balance on the year would be on the debit side of the accuut, hence the almost nominal intrinsic value of gold, and, therefore, its suitableness as a staudard. The same, howeaer, acnnot be said of silver, the cost obtaining which fluctuates greatly between *nothing* and twentypence per once, while gold remains at £3 17s. 6d.—*Indian Agriculturist.*

CACAO CULTURE IN ECUADOR.

The history of Ecuador does not record when the cacao plant was introduced into the country, but it is stated that the production in 1741 was from 35,000 to 40,000 "cargas" of 81 lbs. each. It is believed that cacao came originally from Mexico, where it was cultivated by the Aztecs long prior to the Spanish conquest. In Mexico it was called "cacri" or "cascara quahuitl," and the product was called "chocolatl," from which the word chocolate is derived. It is produced in five provinces of the coast of Ecuador, Los Rios, El Gro, Ouayas, Manavi, and Esmeraldas. The soil best adapted for cacao plantations is one that is deep and moist, the root of the tree growing vertically downward to a considerable depth. Silicious clay is especially preferred on account of the phosphoric acid and potash required by the bean. Banks of navigable rivers are selected generally because of the transportation facilities, but important plantations are found at considerable distances from waterways. Cacao is planted from fresh seeds. Four or five are put in each hole, which are five yards apart, in rows. Formerly they were two or three yards apart, but experience has shown that this method does not give the plant sufficient air, light, and nourishment. The United States Consul-General at Guayaquil says that the cultivation of cacao in Ecuador is limited to caring for the plant until it reaches maturity, then cleaning and weeding once a year. In the first few years the plant is pruned occasionally, in order that it may "run to fruit" more quickly. Manures have never been used, even when the ground has been cultivated over a century, and no irrigation is practised. The sediment, spread over the lands by the rains during the rainy season, and the decaying vegetation, appear to afford sufficient nutriment. In some haciendas, however, the proprietors pile up leaves and other vegetable matter found in the vicinity of the tree at its foot, and also rub down the bark with coarse cloth to destroy the adhering parasites. In the primitive manner in which it is grown and harvested, cacao yields a good return on the capital invested, but if scieutific methods were adopted there is no doubt that the increase in production would be large. In the sixth or seventh year the tree commences to bear, but the pods at this time are very small and scarcely repay the effort to gather them. In the tenth year the tree reaches full maturity. It then produces on an average 1 lb. of dry cocoa of good *quality.* There are many trees which produce more, especially those which are isolated, some of which have yielded at one picking as much as 7 or 8 lb. In the province of Oro (Machala), 1½ to 2 lb. per tree is the estimated yield. The tree is in bloom during the entire year, but most of the blossoms fall before fructification, which occurs twice a year, the time varying with the locality. The cacao tree grows to a height of 20 or 30 feet; its leaves are evergreen and lanceolated in form; the base of the main trunk attains a thickness of 8 to 10 inches; the bark is hard and of greenish coffee colour. The blossom is very small, pinkish white and wax-like in appearance. It grows directly out of the main trunk and branches. If it fructifies, the petals fall off, and from the stamens, in the course of from fifty to seventy days, an oblong pod is developed. This pod is of golden colour, and contains some twenty to thirty-five grains of cacao, enveloped in a gummy liquid which coagulates on exposure to air. The outer rind of this pod is dark or golden yellow in colour, and very hard, a sharp instrument being necesssary to cut it open. Its size varies acoording to the kind of cacao, from 8 to 15 inches long by 2 to 6 in. thick. The outer rind is marked by longitudinal furrows, more or less pronounced, which indicate the interior arrangement of the seeds. Both the outer rind and the gummy contents of the pod are porous, and blacken in colour as soon as picked, and in Ecuador are of use only to fertilise the soil upon which they are cast. As soon as the pods begin to ripen, they are removed with pruning knives, very sharp, and attached to the ends of long poles, which are lengthened by joints as often as required. As the twigs are very tough, the blow with this instrument must be strong and well aimed, and the labourers must be experienced on account of the particular skill that is required and the fatigue that attends handling heavy poles sometimes 30 feet high, with the face continually upturned. Whenever they can be reached the pods are cut off with a machete. A good deal of cacao is lost by the carelessness of the labourer, and his disinclination to deal with the pods in the upper branches. The pods are heaped in piles by one set of labourers, while another cuts them open and extracts the contents. A sharp pruning knife is used, and the seeds are often damagedthrough carelessness. For extracting the gummy substance and the seeds, an implement made of an ox rib is used. The drying is done on open platforms made of split bamboo and palms, where the cacao is exposed to the sun during three or four days, and in order that it may dry uniformly and well, labourers are employed to tread it out with bare feet. If not well dried the bean is apt to ferment; and if excessively dried it shrinks and finally turns black. The dryers are provided with covers for protection against rain. Attempts have been made to introduce drying machinery (steam), but at present not one plantation in Eucador uses it. When dried in the primitive fashion stated, a great deal of pulp yet adhering to the grain, the cacao is put into sacks and sent to Guay quil to be sold in its natural state. Some merchants, it is said, attempt to deceive the buyer by washing an inferior bean in achiote, which gives the skin the appearance of first-class cacao, but this practice is severely condemned by honest merchants, and is seldom followed,nor is reddish earth used in Ecuador as it is elsewhere for the purpose of preserving the grain from decomposition, and of increasing its weight. Reaching Guayaquil, the cacao is subjected to the cleaning process. Splinters, dirt, and defective beans are eliminated, and the adhering clusters of beans broken apart and dried several times before shipment. During this process the cacao loses 4 to 5 per cent, in weight. The sacks for foreign shipment contains from 60 to 70 kilogrammes (132 to 154 lb. net. The largest portion of the crop is bought in advance by Guayaquil merchants engaged in this business, who lend considerable sums of money during the year for current expenses of cacao estates. Large capital is necessary, and the number of merchants engaged in the business is limited. The profits of a plantation depend chiefly on the quality of

the land, management and proximity to market but; it may be reckoned approximately at from 40 to 50 per cent. per annum on the capital invested which will continue for an indefinite period, cacao trees lasting for several generations. The price of land varies greatly, and depends on the caprice or need of the seller. Land adapted to cacao cultivation covers an area of some 19,600 square miles in the coast provinces of Ecuador. A very small proportion of available land is now under cultivation, although there are large tracts adjoining important estates. The chief impediment to the rapid development of cacao plantations in Ecuador is the system of "peonage conciertos," or slavery in all but name, which is in vogue, whereby labourers are bought and sold openly for debts. The production of cacao in Ecuador has been increasing since 1836, and the crop in 1899 is expected to be nearly 30,000 tons, the chief producing province being Los Rios, these following in their order of their importance: Guazas, El Oro, Manvi and Esmeralds. —*Journal of the Society of Arts.*

GAME AND FISH ON THE NILGIRIS.

There is always a good deal of general interest to be found in the pages of the annual reports of the Nilgiri Goverment Fish Preservation, Association which held its annual general meeting at Ooty, on Friday. The year is said to have been a very successful one in the way of the preservation of these two sources of sport that yields "supplies" for the table. The first article in the report describes what has been done during the year in the way of the "destructian of vermin"; but the word "vermin" here is used in a very special sense. For instance, the creature that is primarily set down as vermin is the otter; and it is so called because the otter is the great enemy of trout—a species of fish which the Association have long been trying to cultivate in Nilgiri streams. But the Nilgiri streams—in the words of tne reports—"swarm with the pest, and our promise of tront greatly depends on the destruction of the vermin." Something was done during the past year: for seven otters were killed, which is the second best record. Of other "vermin," 11 wild dogs, 141 wild cats, and 62 mongoose were accounted for, which was a record in every case.

The report regrets that, in spite of protection, immature game not unfrequently falls a victim to the "chapter of accidents" or; worse still, is killed by inexperienced sportsmen, who trust entirely to their shikaries, and are unlucky enough to get hold of unscrupulous men who only care to secure meat add trade on the inexperience of their employers and urge them to kill game that should be left for another day. The report represents that if the Association can but succeed in making things too hot for the careless or unscrupulous shootist, and especially for the worst class of shikari, it will be possible to write more definitely and satisfactorily of the results of protection. Actul poaching by the Badaga population has undoubtedly been checked; and at the presnt moment the most confirmed poachers are Kurumbers from Malabar, who make raids on the Kundahs and manage to evade detection, and wonder, no doubt, why they shouldn't be allowed to capture the game as freely and unrestrainedly as their father and forefathers did before them!

As for the culture of trout, Major Grant, v. c., who was an enthusiastic fisherman, has gone; but in Major T. N. Bagnall the Association has found "a keen all-round sportsman, who has gone *con amore* into the business of trout culture in a workmanlike fashion, which promises great things for the future." Hitherto the importation of trout ova has not been very cuccessful, and Major Bagnall reports, in amusing fashion, that the whole supply received during the year was worthless, the fact being that in some cases "it had altogether rotted away, and only the smell remained." For the rest, he reports that Burnfoot Lake unquestionably contains trout though he has never seen one himself. Some have been seen in Avalanche river; but still they have never appeared to Major Bagnall. In Emerald Valley river, on the 23rd of June, Major Bagnall caught a male trout weighing 4 lbs. —"he fought well, and was in good condition." Others have been caught at the same spot. There is no certain evidence of trout having been seen in Pykara river, but Captain Campbell, R. A., who was fishing above the bridge in July, thinks a small trout came at his fly. Carp seen to be thriving there. Captain Beadnell has had most success, as he caught 15 lbs. weight of fish in tree hours one day. Major Bagnall believes these fish to be Maheer and wants opinions.

Apart from fish, the "Nilgiri Game Bag" shows that all sorts of animals have fallen victims to the guns of different shikaris during the past five years, namely ibex, sambur, panthers, bisons, bears, and tigers. The last bear was shot at Kullakombay, in September last; and in 1899 there have been as many as nine tigers shot. the largest of which measured 6ft. 6 inches.

Certain rules were fixed at the meetig in regard to the preservation.—*M. Times*

PUBLIC SALES OF TEA IN COLOMBO

DURING THE YEAR 1899

	Offered	Sold	Avg.	Exchauge Demand Drafts. 1899.	1898.
	lb.	lb.	c.	*s. d.*	*s. d.*
Jan. 11	626,680	562,674	36	1 4 1-8	1 4
„ 18	911,981	767,907	35	1 4 1-8	1 3 31-32
„ 25	852,419	760,805	34	1 4 3-32	1 3 15-16
Feb. 1	502,405	462,147	36	1 4 3-32	1 3 7-8
„ 8	521,541	480,362	38	1 4 3-32	1 3 15-16
„ 15	717,348	639,171	38	1 4 1-32	1 3 7-8
„ 22	685,113	651,223	40	1 4 1 16	1 3 31 32
Mar. 1	642,595	590,740	42	1 4 1-32	1 4
„ 8	582,808	521,913	42	1 4	1 4
„ 15	722,156	631,788	42	1 4	1 3 31-32
„ 22	868,240	743,492	42	1 4	1 3 13 16
„ 28	606,301	499,2[illegible]9	43	1 4	1 3 13-16
Apr. 12	1,159,307	1,037,992	44	1 4	1 4
„ 19	872,706	672,060	43	1 3 15-16	1 4 1-16
„ 26	666,187	506,062	43	1 4	1 4 1-16
May 3	685,345	487,540	39	1 4	1 3 15-16
„ 10	859,797	673,360	38	1 4	1 3 31-32
„ 17	1,080,296	912,283	36	1 3 31-32	1 4 1-8
„ 24	846,336	751,891	37	—	1 4
„ 31	891,325	797,155	37	1 3 31-32	1 4 1-32
June 7	682,239	585,644	37	1 3 31-32	1 3 31-32
„ 14	936,119	846,169	37	1 4	1 3 31-32
„ 21	871,993	745,658	37	1 4	1 3 29-32
„ 28	762,845	679,995	36	1 4 1-32	1 3 3-4
Jnly 5	714.012	618,643	38	1 4 1 32	1 3 21-32
„ 12	651,941	566,198	36	1 4 1-32	1 3 11-16
„ 19	1,027,345	809,368	36	1 4 1-32	1 3 15-16
„ 26	894,271	735,708	35	1 4	1 3 13-16
Aug. 2	446.516	348,521	37	1 3 31 32	1 3 27-32
„ 9	730,189	576,352	37	1 4	1 3 29-32
„ 16	709 623	563,242	36	1 4	1 3 29-32
„ 23	727,824	732,068	37	1 4	1 3 31 32
„ 30	779,117	690,039	40	1 4	1 4
Sept. 6	585,206	507,701	38	1 4	1 4
„ 13	668,769	625,950	40	1 4 3-32	1 3 15-16
„ 20	891,490	853,840	40	1 4 3-32	1 4
„ 27	739,242	696,767	43	1 4 3-32	1 3 15-16
Oct. 4	582,724	501,144	41	1 4 5 32	1 3 31-32
„ 11	734,160	560,688	43	1 4 1 8	1 3 31-32
„ 18	765.446	630,912	40	1 4 1 8	1 3 31 32
„ 25	784,427	594,483	38	1 4 1-8	1 4
Nov. 1	563,676	496,304	40	1 4 3-32	1 4
„ 8	632,286	541,472	39	1 4 5-32	1 3 15-16
„ 15	678,871	506,3[illegible]3	38	1 4 5-32	1 3 15-16
„ 22	926,087	635,403	38	1 4 1-8	1 3 31-32
„ 29	819,343	717,697	37	1 4 1-8	1 4
Dec. 6	900,065	735,777	36	1 4 1-8	1 4
„ 13	851,546	688,126	37	1 4 1-8	1 4 1-32
„ 19*	1,130,000	930,000	37	1 4 1-8	1 4 1-16
Total f r 1899—	37,488,258	31,870,236	38½	1 4½	1 3 7-8
Total for 1898—	35,928,262	28,831,747	35	——	——

* Approximate.

PUBLIC SALES OF TEA IN LONDON.

DURING THE YEAR 1899.

		Packages Offered.	Packages Sold.	Reuter's Average. 1899	Gow. Wilsons and Stanton's Average. 1899.	1898.
Jan.	5	20,000	18,000	8	8	$8\frac{1}{4}$
”	12	28,000	26,000	$8\frac{1}{8}$	8	$8\frac{1}{4}$
”	19	17,000	15,000	$8\frac{1}{8}$	8	$8\frac{1}{4}$
”	26	21,000	20,000	$8\frac{1}{4}$	$8\frac{1}{4}$	$8\frac{1}{4}$
Feb.	2	27,000	26,000	$8\frac{1}{8}$	8	$7\frac{3}{4}$
”	9	24,000	23,000	$8\frac{1}{8}$	8	$7\frac{1}{2}$
”	16	15,000	14,000	$8\frac{1}{2}$	$8\frac{1}{2}$	$7\frac{1}{2}$
”	23	15,000	14,000	$8\frac{3}{4}$	$8\frac{3}{4}$	$7\frac{1}{4}$
Mar.	2	21,000	20,000	$8\frac{5}{8}$	$8\frac{1}{2}$	7
”	9	28,000	27,000	$8\frac{3}{4}$	$8\frac{3}{4}$	$7\frac{1}{4}$
”	16	26,000	25,000	$8\frac{3}{4}$	$8\frac{1}{2}$	7
”	23	21,000	20,000	$8\frac{7}{8}$	$8\frac{3}{4}$	$7\frac{1}{4}$
Apr.	13	30,000	25,000	9	9	
”	20	27,000	21,000	$8\frac{5}{8}$	$8\frac{1}{2}$	$7\frac{1}{2}$
”	27	18,000	15,000	$8\frac{1}{2}$	$8\frac{1}{2}$	$7\frac{3}{4}$
May	4	21,000	20,000	$8\frac{1}{4}$	$8\frac{1}{2}$	$7\frac{3}{4}$
”	11	21,000	20,000	$8\frac{1}{8}$	$8\frac{1}{4}$	$7\frac{3}{4}$
”	18	30,000	27,000	8	$8\frac{1}{4}$	$7\frac{3}{4}$
”	25	—	—	—	—	—
June.	1	25,000	24,000	8	8	$7\frac{3}{4}$
”	8	35,000	32,000	$7\frac{3}{4}$	$7\frac{3}{4}$	$7\frac{3}{4}$
”	15	26,000	24,000	$7\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$
”	22	19,000	18,000	$7\frac{3}{4}$	$7\frac{1}{2}$	$7\frac{1}{2}$
”	29	26,000	25,000	$7\frac{1}{4}$	$7\frac{1}{4}$	$7\frac{1}{2}$
July.	6	—	—	—	—	—
”	13	—	—	—	—	—
”	20	16,000	15,000	$7\frac{1}{4}$	$7\frac{1}{8}$	$7\frac{3}{8}$
”	27	8,000	7,000	$7\frac{1}{4}$	$7\frac{3}{8}$	$7\frac{1}{4}$
Aug.	3	13,000	13,000	$7\frac{7}{8}$	—	$7\frac{1}{2}$
”	10	17,000	16,000	—	—	$7\frac{3}{4}$
”	17	43,000	36,000	$7\frac{1}{4}$	$7\frac{1}{8}$	$7\frac{3}{4}$
”	24	41,000	38,000	7	$6\frac{3}{4}$	$7\frac{7}{8}$
”	31	38,000	32,000	$7\frac{1}{8}$	7	$8\frac{1}{4}$
Sept.	7	31,000	30,000	$7\frac{1}{2}$	$7\frac{3}{8}$	$8\frac{1}{4}$
”	14	29,000	28,000	$7\frac{3}{4}$	$7\frac{5}{8}$	$8\frac{1}{4}$
”	21	27,000	26,000	$8\frac{1}{8}$	$8\frac{1}{8}$	$8\frac{1}{4}$
”	28	28,000	26 000	$8\frac{1}{4}$	$8\frac{1}{4}$	$8\frac{1}{4}$
Oct.	5	31,000	29,000	$8\frac{3}{8}$	$8\frac{1}{4}$	$8\frac{1}{2}$
”	12	29,000	28,000	8	8	$8\frac{3}{4}$
”	19	25,000	23,000	8	$7\frac{7}{8}$	$8\frac{1}{2}$
”	26	22,000	21,000	8	8	$8\frac{1}{2}$
Nov.	2	23,000	22,000	$8\frac{1}{2}$	$8\frac{3}{8}$	$8\frac{1}{2}$
”	9	29,000	26,000	$8\frac{1}{4}$	$8\frac{1}{4}$	$8\frac{1}{2}$
”	17	23,000	22,000	$8\frac{1}{4}$	$8\frac{1}{8}$	$8\frac{1}{2}$
”	23	26,000	22,000	8	$7\frac{7}{8}$	$8\frac{1}{4}$
”	30	20,000	19,000	$7\frac{3}{4}$	$7\frac{5}{8}$	$8\frac{1}{4}$
Dec.	7	23,000	21,000	$7\frac{3}{4}$	$7\frac{5}{8}$	$8\frac{1}{4}$
”	14	22,000	19,000	$7\frac{3}{4}$	$7\frac{3}{4}$	8
”	21	12,000	12,000	$7\frac{3}{4}$	$7\frac{7}{8}$	8
Total for 1899		1,117,000	1,030,000	8	8	$7\frac{7}{8}$
Total for 1898		1,139,000	1,092,000	—	—	—

OUT FOR A SHOOT IN BRITISH CENTRAL AFRICA.

(BY AN EX-CEYLON PLANTER.)

HIPPOS—ANTELOPE—ZEBRAS—ELEPHANTS, &C.

To relieve the monotony of the regular routine of daily work on the plantation, a run out now and again for a bit of camp life does one a power of good.

On 8th October I called my negro boy to send for my "Kapatu" (conductor in Ceylon) to get ten men for "machella," hammock slung to a strong bamboo pole, and ten men for loads to start at 6 a.m. tomorrow. To see the happy grin on the "Kapatu's" face at the prospect of "Nyama" (meat) is amusing. Without a word off he runs to execute the order, for he well knows for such an outing there will be no lack of volunteers.

Before daylight machella team and men for loads are ready. Cook, plate-washer and boy are also ready with baskets of grub, cooking utensils, tent, &c., &c. By 7 o'clock off goes the caravan, after being directed to make for the Ruo—Portuguese boundary.

After giving instructions about estate work during my absence, I tumble into my "machella," manned by two sturdy negroes, one at each end of the pole; and off they trot like a pair of tandem ponies at the rate of about five miles an hour. These men are relieved by others belonging to the team as we jaunt along. After two hours the Ruo is reached: here is a good-sized stream about 80 yards wide, with little water, however, at present, the weather at this season of the year being very dry. We easily crossed.

Now having reached the wilds or

COUNTRY OF THE WILD BEASTS

—"cherombo," as the natives call it—my team of machella men are returned as there are no village paths ahead to run on comfortably. After a cold roast fowl and some curry and rice, washed down with a cup of delicious Ceylon tea, a start is made through the bush—a straight line is made for "Chiperone" mountain seen in the far distance through a hazy sky. We had not gone far when we came upon elephant tracks running in every direction. Some of the tracks bore evidence of large herds having been on the march during the rainy season. Elephants arrive in this "Malolo" country about March and leave when the bush fires begin in July and August, during which time the grass is high and the rivers are flooded, so that people cannot easily get about to disturb the noble beasts as they roam freely during those months. Confident of safety, although quite near to native villages on the opposite bank of the Ruo—the river being seldom fordable, and there are no boats as the people have no use for them—I had not gone far before a man arrived in great haste to say

THREE HIPPOS

were in a large pool in the river and we must go back and have a shot at them. The hippos are somewhat like your rogue elephants, take any number of bullets, and unless struck on the vertebra or right on the brain-pan itself, one need not expect to get them. Upon arrival at the river bank the strictest silence had to be maintained, for when a noise is made the beasts disappear and walk away under water, for goodness knows how far, and by creeping over the shallows to the next deep pool, which may be a mile or more away, escape unobserved. Upon peeping through the bushes three grand pig-like heads were seen, every one turned towards us, only eyes, nose and ears showing above water. A steady aim at the nearest one's ear and bang went a solid Lee-Metford bullet into the head somewhere, for it didn't hit the water. All three heads disappear, only leaving the ripple on the surface where they had been, and all is still as death again. Silently waiting with the rifle ready, silently watching the water, for another shot, is rather monotonous; about 20 minutes later, however, two heads appear about 80 yards down the river and commence blowing and grunting, making a thundering noise—too far off to shoot, however; so I had to make tracks for the spot,

but too late, of course. After about five minutes' waiting one solitary head appears and bang goes a bullet into his eye; down goes my game again only to re-appear; this time done for, floundering heels overhead. "Hit this time" shouts the nigger: "Nyama, nyama" (beef, beef) and the greatest excitement prevails amongst my men. I was meantime not idle, for I charged and fired, as fast as I could, altogether eight shots, and still the beast went on turning over and over; for about 10 minutes this performance went on, till the pangs of death overtook the monster and he sank to the bottom to rise no more. Although I waited fully two hours, I never saw the other two again. How long they can remain under water I cannot say, but the natives say they can sleep lying on the bottom of a pool like the "crocks."

Next morning at daybreak all were astir and we soon made tracks for the river to find at the bottom of the pool, floating against the rapids in shallow water, the carcass of our hippo: the huge beast looked in the distance like a floating whale. All hands were soon at work, skinning and cutting up, great sport going on amongst the willing workers at this job, much to the amusement of onlookers who had congregated from the near villages on the prospect of a piece of meat, for there is nothing the African loves or worships more than "Nyama." No matter what the quality is, the savage eagerly seizes any scrap as the work progresses, skewers it on a stick and roasts it very slightly before a fire or on the smoke and ashes, tearing it to pieces with his horney fingers and devouring it with the greatest relish. The whole day was occupied skinning, butchering and despatching loads of meat to friends and relations in the villages. By evening there was hardly a vestige left except

MY TROPHY

—the head which was slung on a pole and despatched to the estate. Next time I go hippo shooting, I shall try what effect a dynamite cartridge has, thrown into the pool, to rouse the sleeping hippo who won't rise when wanted to. At day light next morning all were active. By way of experiment I tried a stick of hippo meat, but found it too rank in flavour, stringy and porky for my taste. We struck camp and marched in the same direction as yesterday. After two hours' tramp through the forest,—something like your Park country, but instead of the short lawn grass so easy to walk upon, we have a burnt off guinea grass field intermixed with scrub,—we got into a long dambo, that is a damp hollow with short tufty grass like the Uva Patanas.

ANTELOPE.

In the distance, about half a mile off, a herd of "sable" were visible. Skirting along the edge of the forest, I got to within 100 yards, when I could see they were on the alert fidgeting about all in a heap with the leaders of the herd always facing me. No delay now, my only chance, and bang right into the finest bull's chest; a stampede, of course, resulted upon the report of the rifle and there was just time for another couple of shots before they were out of sight. Upon examination of the spoor, we found two were wounded. A party of men started on the track of each. I followed the biggest and had not gone far, before I heard a grunt or a fierce snorting noise: a plunge forward and out bounded my wounded bull, full in view, head erect, with magnificent horns sweeping over his majestic neck. One bullet well forward on the shoulder-blade laid him low with a forward bound. The other "sable" was tracked for a long distance, but the wound must have only been a flesh one for we never came up to the beast; so we gave up the hunt and camped near the water about a quarter of a mile distant.

THE SABLE ANTELOPE

is in my opinion the handsomest buck we have in Nyassaland: some may fancy the more rare Kudu, but there are so few here and only usually individual bucks to be found, that I should think they are emigrants from the large river or lake region. Upon having a look round next morning, I discovered spoor of Zebra, Hartbeest and other game, so I decided to make a stay at my present camp. During a tour in the evening I suddenly rounded a corner upon about 20 zebras and bagged one with a bullet in the neck and another went off badly wounded, for I could see he was not able to keep up with the herd but forged ahead very leisurely at about 100 yards in the rear. My men gave chase and I soon followed. After tracking for about half-a-mile, one of my men pointed out the wounded beauty standing behind a rock doing a bit of an amble on all fours. It was such an amusing performance that I hesitated about firing till my feelings got the better of me, so I put him out of pain with a bullet in the neck. I found he was shot before through the stomach. It always seems to me a shame to shoot such pretty harmless, and might be useful creatures; but the skins make a handsome trophy when set up in a museum. This was my sole reason for shooting the two which fell to my rifle on this occasion. I am sure the zebra could be easily kraaled, and tamed to be a useful and docile beast of burden to mankind. They are to be found in large herds all over Nyassaland.

The following two days were occupied tracking a herd of buffaloes and four elephants which passed through the country: the latter I was very anxious to get a shot at, but I could not come up on them; they seemed to travel at a great rate and evidently on the march to some other part of the country. After a trudge of some 10 to 15 miles I returned dead beat.

Next day I had better luck and managed to knock over

A WART HOG

—not by any means common game in these parts. The other pig is common enough and a very destructive brute in native gardens, but neither is so numerous in Africa, as the wild pig of Ceylon is in the lowcountry about the tanks, being only found in pairs or at the most in herds of three and four. I have never seen more than four together.

The following two or three days I had no luck although I saw and fired at some hartbeests, so I decided to return, meantime dispatching a man for my Machella and men to meet me at the Ruo.

On my way home I shot a Bush-buck and a Nyema; the latter was to my surprise standing by the water taking no notice of us. When examined I found that he had some severe wounds on the neck and head, doubtless clawed by a lion, whom hunger had roused to approach too near before his noble lord had finished his meat.

"SENTIMENTAL" RISES IN COFFEE.

Says the London *Grocer* of Dec. 16 :- In their circular of the 14th ultimo, Messrs. W. H. Crossman & Bro., of New York, make it appear that the recent advance, principally in Brazil coffee, has been entirely "sentimental"—that is, not based on sound and cogent reasons. They, in effect, declare that the higher prices established were engineered on the reports of bubonic plague in the Brazil which, however, was not epidemic, simply sporadic ; and though it did not interfere with receipts or shipments of coffee, yet, for "sentimental" purposes, the word "plague" was deemed sufficient in the absence of actual facts, to produce a rallying power in favour of rising markets. A further manœuvre to foster speculation in the article was to publish reports about "Italian labourers leaving the Brazils in large numbers," which, as those know who are familiar with their ways, is no more than they usually do after "the picking of the crop" is over. It also often happens that just as many and even more labourers of the same class return to the work again when the time comes round. Again, the statement that there was a "shortage of labour" is easily disproved by the bare fact that as many as 3,600,000 bags of Santos coffee were moved and marketed this season with four months. In Mincing-lane, likewise, a leading firm of brokers last month described the feeling in favour of dearer coffee as merely one of "sentiment." It must be owned that some idea of this sort has had a good deal to do with the strong upward movement that has sprung up in every branch of the coffee trade since September, when prices were at their lowest. The firm added—"We cannot forget when Brazil coffee was sold from 80s. to 90s., and that only two or three years ago 50s. was looked upon as a very low figure ; 32s. 6d. for good average Santos now cannot therefore be assessed as anything but a very low price, even if it has been current under exceptional circumstances, at some few shillings lower." The phrase "some few shillings lower" refers undoubtedly to the period when a similar kind of coffee was disposed of in London for September delivery at about 25s. per cwt., a point at which the most discontented of "bears," we should think, would be satisfied to see the downward tendency cease. Since, then, however, it cannot be denied that the rise in prices has made good progress, being equal to at least 7s. per cwt., and it is not improbable that, considering the highly speculative character of the business in this class of coffee, a fresh start forward will be made ere long. Still, it should be borne in mind that there is another side to the question as to whether the value of coffee is likely to advance or decline, and of that we are reminded by Messrs. W H Crossman & Brother, who tells that—"The low value of coffee results from over-production. The only real help for genuine better prices for coffee is diminished production. Up to now prospects of the growing crop in Brazil are reported favourable. Not a single exporter of good standing in Brazil reports the slightest doubt of this. On the weight of supplies alone coffee values declined to the lowest point, but sentiment (say they) soon put them up, and this in the face of indications of larger supplies next September than ever known before, with the 1900-1901 crop, if anything, in excess of the present—which shows positively that over-production is in full swing. The trade must remember 'bull' sentiment does not consume coffee, but higher prices so created stimulate production. Values finally are not decided by 'sentiment,' but entirely by supply and demand, and it is probable the present sentimental rise will bring the same experience that has attended the different attempts to lift values artificially during the past three years."

PLANTING REVIEW FOR 1889.

(Special.)

TEA.—Considerably more tea has been secured than the amount estimated by the Planters' Association in February, 1899. We have exported 5,000,100 lb. more than estimated to all parts of the world, and we have sent about 10,000,000 lb. more to United Kingdom than last year. The Planters' Association over-estimated the exports of tea to Russia by two and Australia by one and a half millions. In this they erred in good company. Messrs. Forbes & Walker made the same estimate, and there were well-known and smart Colombo merchants on the P.A. Committee who made up the estimate of exports of tea to other parts than the United Kingdom. There are two or three reasons given for the Planters' Association under-estimating the output of 1899.

Manuring.—Doubtless a large sum of money has been spent in the last eighteen months on manure ; and if manure is really to do us much good, it was bound to increase the exports in the last few months of 1899, and it will be wise in the Committee of the Planters' Association to take into account a still greater increase to our exports by manuring in 1900, for a second application of manure has always a more potent effect on the bearing than the first.

1899 was, taking it all round, a wetter season than 1898, and there can be no doubt that a good rainfall exerts a very strong influence on the flushing of tea bushes.

Prices.—A terrible dead level has been noticeable in 1899—lowcountry and medium levelling up and high country levelling down. There are only a few stand-out teas, and the outside public cannot judge if these stand-out teas result from finer plucking and lower yields, or disposing of low grades under another mark. Of this we may be certain: manure will force out more leaf where the trees naturally flush more freely, and that is where teas are low priced, being wanting in strength and flavour. I do not lose sight of the fact that manure will also help the bushes to give more leaf in months when the tea bushes do not flush freely and yield good class teas. However, all this extra flush in tea will necessitate tea estates having plenty of withering room in their factories, and also machinery. Is there much inducement planters plucking finer and sending high to grades of tea to the market? The first market wire advice received from London in 1900 was : "Prices firm and steady demand for tea except for fine broken pekoes and fine pekoes." What are the *con's* to much increase of tea shipments in 1900 ?

Labour.—Plumbago mining and extension of railways no doubt will shorten the supply of labour. You hear already well-known

sensible planters say:—"What is the good of manuring, if we have not the labour to secure the increased flush?"

Tea Blights.—Well, we had these *galore* in May and June of last year, but they have had no effect on the flushing; but they may eventually handicap us, and do away with the probable increase high cultivation naturally encourages us to expect. One who has passed through the *Hemileia vastatrix* experience, remembers only too well an exceptionally good coffee crop after the deadly pest had begun to undermine the strength of our trees. Often and often in the papers and visiting agents' quarterly reports, you would find: "Never saw the estate looking better. The bushes have a splendid cover of leaf and coffee blossom; spike showing up well." Three months after, what a change would come over the spirit of the dream:—"I never saw a more virulent attack of leaf disease. The spike that promised so well has left us only a few berries on leafless branches," &c., &c. However, grey and brown blights are very mild ones as compared with *Hemileia vastatrix*, and present scientific and tea farmers' opinions are that they will be kept in hand by judicious manuring and that they will only be very troublesome when seasons are abnormal.

CACAO.—The exports are decidedly higher than last year, viz. by 5,000 cwt., but that is generally attributed to a large area coming into cultivation. Great attention is paid to dealing with the fungus on its first appearance, but there is the difficulty to be faced of barking the trees so much as to ring the trees, with fatal results to the tree operated on.

CINCHONA.—Notwithstanding better prices, the exports have diminished 30 per cent. under 1898. There is no cinchona to speak of in the island. I have heard men talking of commencing to plant; but I have not seen any such planting. [Certainly, there has been some planting in 1898 and 1899.—ED. *C.O.*]

CARDAMOMS.—The export is less by 40,000 lb. Clearings have been planted in 1899, and some clearings, planted two or three years ago, must be coming into bearing. It is what you may call a "pocket cultivation," and only in the hands of a favoured few.

COCONUTS.—Under all the headings, except "desiccated coconuts", there is a decrease in 1899 under 1898: why or wherefore the writer cannot say.

COFFEE has made a dying spurt in the way of exports, so far as 'plantation' and is concerned. I should think the future crops will barely satisfy the local consumption.

THE TRADE OF CEYLON IN 1899.

No. I: EXPORTS.

(By a mercantile authority.)

The export trade of 1899 has exhibited a good deal of fluctuation both as regards volume and value. But, generally speaking it may be said to have resulted in what may be termed a prosperous year.

TEA.—Our staple product has contributed largely in this direction. The excess for 1898 being about 10 million lb., three-fourths of the excess going to the United Kingdom. At the same time native products, such as produce of the coconut palm, copra, cinnamon, coir stuffs, plumbago, &c., have all to a greater or less degree, participated.

A steady exchange has helped exporters, and this in itself has contributed to promote business in the minimising of risk which had for a long time previously hampered mercantile transactions.

CARDAMOMS.—Exports are slightly under those of last year, but there is extension of cultivation going on in a few suitable localities; the result of this, however, will not be felt for some years to come. Indian demand fell off during the latter part of the year, and prices have declined to about R1 80 for first and second qualities.

CINNAMON.—There has been a good export both of quills and chips and good prices have prevailed throughout the year. The price of ordinary assortment being now about 58 cts per lb. The novel feature in connection with this article is the large export there has been of "wild" description, as much as 195,008 lb. having been exported, chiefly to London, but the value has fallen so low, that the collection of spurious sorts is not likely to be encouraged.

CINCHONA continues to fall off in quantity. About 30 per cent less having been exported last year than in the previous year.

COCONUT OIL shows a decline of about 35,000 cwts. less than in the previous year, the demand for India and Singapore having been much curtailed. On the other hand the export to London and America has gone on briskly. The aggregate for the year is a little over 20,000 tons. The present value is R312·50 to R315 per ton f.o.b., as compared with 317·50 a year ago.

COFFEE.—The year has been a little more favourable, and plantation shows an excess of 6,400 cwt., whereas native seems to have been extinguished altogether, the export being returned as nil.

COCOA.—This has continued in good demand throughout the year, and there is a steady inquiry for bright colory sorts. The value being about 45 to 47 rupees per cwt.

DESICCATED COCONUT.—This industry continues to expand. The quantity exported during the last year being 13½ million lbs., or roughly speaking, ½ a million lb. more than in the previous year.

COIR YARN AND FIBRE continue to meet with a steady inquiry. The quantity sent away being about the same as in the previous year.

PALMYRA AND KITUL FIBRES show some falling-off, the values having declined considerably in the home markets.

PLUMBAGO.—This article has excited the greatest interest during the past year. In the early part of the year, it was supposed that there would be an over-supply and a great decline in prices, and this did take place to some extent, but, it was succeeded by a renewal of inquiry, and prices were driven up to a level beyond all previous experience. There has since been some subsidence of values, but there is still a fairly good off-take at prices which must well repay the pit-owners, if not the middle-men or contractors. The digging of plumbago has attracted all classes of natives, and many must have been reaping a rich harvest, although doubtless there has been disappointment amongst the

less lucky ones. Mining on scientific principles, and by Europeans, is now being attempted in a number of directions, and if successful, this will invest the trade with an interest it has never possessed before. The exports in 1899 were over 30,000 tons, against about 24,000 tons in the previous year.

CITRONELLA OIL shows an increase, and cinnamon oil a decrease in the quantities sent away, but the export keeps very steady from year to year.

PLANTING NOTES.

TEA CORPORATION, LIMITED.—At the annual meeting of this Ceylon Company reported in our daily and *Tropical Agriculturist*, an interesting speech was made by the Chairman (Mr. Cyril Gurney) explaining the working of the concern during the year ended 30th June last. Although so much tea was not produced as was expected still the quantity was in advance of the crop of the previous year by 100,000 lb. There had also been a great improvement in the net price realisd and in the quality, and make of the tea. Favourable reference was also made to the results of manuring and a generally hopeful view taken of the prospects of the concern which is being worked as economically as possible consistently with good cultivation, and management. A good deal was said about the mining of plumbago on the Company's properties, and the directors were authorised to spend up to £500 on this work provided they were advised by a mining expert that it was advisable to undertake it. The directors have also been authorised to issue additional debenture stock for the purpose of developing the property.

INDIARUBBER.—It is hardly necessary to explain the importance of the rubber industry or the great trade in rubber which has now developed with all countries supplying the raw material, and the growing need there is for supplementing such supplies by cultivating the more suitable kinds of rubber-yielding trees, more especially in the West Indies, some parts of Africa, Ceylon, Southern India and the Straits Settlements. Readers of *Commercial Intelligence*, however, will keenly appreciate the value of a work dealing fully and authoritatively with the whole question, and that is just what we have in "All about Rubber and Gutta-Purcha," a manual compiled by Mr. J Ferguson, editor of the *Ceylon Observer and Tropical Agriculturist.* The first compilation of an India-rubber Planters' Manuel was prepared sixteen years ago, a second edition considerably enlarged appeared in 1887, and in response to numerous enquiries Mr. Fergnson has now published a third edition. In it the author has brought together all the available information in the latest authorities on rubber. [Then follow extracts from the book.] Space does not permit of our dealing at greater length with this admirable work. In upwards of 350 closely printed pages everything of interest in the industry is fully dealt with, and the author has taken great pains to present to his readers just the things they want to know, and in the most lucid and practical manner. Certainly no one interested in rubber should be without a copy of the book —*Commercial Intelligence*, Dec. 21.

Correspondence.

To the Editor.

PLANTING IN PERU.

Peru, S. A.

DEAR SIR,—By chance I became possessed of your valuable "Coffee Planter's Manual, 1898", and I prize it much. There cannot be a place so destitute of conveniences, of information on any subject and especially on the cultivation of coffee, as Peru. This industry, so to speak, has lived and died here several times, but the introduction of pulpers three years ago, more especially last year, (but mark the majority are wooden pulpers) has revived the interest in coffee cultivation, as the coffee can now be exported (although there is a six days' journey on mule back to the nearest railway station). I am ignorant on such subjects as the different kinds of weeds, so detrimental—Hulantala, Spanish needle, Mana grass, Lau-la, etc. We have many weeds here, and I only know them in Spanish, as also bad moths by the thousand. Beetles are not so numerous, and are very highly coloured. I should like to know of any book with coloured plates of the coffee plant in its various stages of growth, also of the weeds and insects (cockchafers) we may have here, but I would require to see their form to distinguish them. Unfortunately planting here has been in the old style, seven and eight feet apart; there is, therefore, necessity to fill up gaps by some other plant that will pay to cultivate. We are somewhere about 4,000 feet or higher, with a fine climate, except when it rains heavily in the months of Dec., Jan., Feb., March; it may rain lightly throughout the other months, and *no winds* to contend with. I would like to receive "The *Tropical Agriculturist*" which, I think, may just furnish the information we most require here and especially in my individual case.—Yours respectfully,

P. H. M.

"INDIAN GARDENING."

Calcutta, Jan. 4, 1900.

DEAR SIR,—I beg to draw your attention to the current issue (today's date) of "Indian Gardening," which enters upon a new phase of its existence, by the addition of a Planting and Agricultural Section.—Yours faithfully,

THE EDITOR.

["Indian Gardening" continues steadily to improve: the new section leads off with a sensible article on the Imperial tea duty, showing that 2d reduction is preferable to abolition; but in a time of war like the present, the less said on the subject the better.—ED. *T.A.*]

RUBBER IN BORNEO.—A correspondent of the *China Overland Trade Report*, writing from Sandakan, December 18th, reports that Mr. De Nije, a rubber planter on the Labuk River, has discovered a rubber tree which he believes has been entirely unknown to botanists hitherto, and which is, moreover, indigenous to this country. Its colour is whitish, but the rubber darkens on exposure to the atmosphere, ultimately going perfectly black. Its quality is very good, and the Chinese here are willing to pay $100 per picul for as much of it as they can get. Samples have been sent to Singapore and Colombo Botanical Gardens for classification, and it is hoped the discovery will prove a valuable one.

EXPORT OF PALM PRODUCE IN 1899:

FROM 350 TO 400 MILLION COCONUTS REPRESENTED IN THE EXPORTS.

WE follow the practice of the last few years in drawing special attention to the total annual exports of the products of the coconut palm, in which an increasing number of colonists are becoming interested, in addition to the thousands of Ceylonese of all classes who are embarked in the enterprise. The European merchant as manufacturer and buyer of coconut oil, has since early days of British rule, been connected with the coconut industry. —the first cargo of coconut oil from Ceylon is said to have been taken to England by Capt. Boyd in 1820,—but European planters of the palm have been comparatively few and far between, until of recent years. Unfortunately, too, the earlier investors chiefly affected districts in the Northern and Eastern Provinces—probably because on the seaborde of these coconuts had long flourished—the distance of which from the capital added to the cost of transport to an extent which reduced profits disastrously. Freights have latterly have cheapened, and experience has taught during the past three or four decades, that proximity to the sea is not essential to the successful and profitable cultivation of the palm; and we have European planters now interested in the product in all parts of the Island, from Point Pedro to Dondra Head, from Batticaloa and Trincomalee to Chilaw and Puttalam. A Ceylonese proprietor advertising in our columns, has made us acquainted with the fact that he had sold seed nuts for inland districts like Yatiyantota, Kurunegala, Kadugannawa, Gampola, Matale, Pallegama, Kandy, Wattegama, &c.; while some of the seed-nuts have travelled as far as Lemesuriyagama in the Nuwara Eliya district! In most cases, these coconuts were to be planted with tea; and European planters express themselves very hopefully in regard to this (to them) new product, as a safe second or third string to their agricultural bow.

While last year saw a continuance of palm extensions, the out-turn of crop for 1899 has not heen particularly satisfactory. We expressed our fears for the year's crop after the severe drought of the first quarter; and when a second drought was experienced in June-July, we ventured to indicate our conviction that the year's out-turn would be short of that for 1898. So far as the Chamber of Commerce Export Tables are a test, that forecast has unhappily been justified. In Oil there has been a falling-off from 435,935 cwt. in 1898 and 409,600 in 1897 to 400,979; of Copra 325,401 cwt. were exported, against 506,277 in 1898; in Desiccated Coconut, in which there has been steady progression since the trade started in 1891 with 1,416,330 lb., there has been a slight increase from 13 million lb. to 13½ million lb.; Poonac shows a falling off, in sympathy with Oil of which it is a bye-product, from 216,620 cwt. to 174,786 cwt.; and so with coconuts in the shell, a decrease is shown from 12,027,714 nuts (and that figure has heen exceeded at least twice) to 11,723,392. There has thus been a falling back in every product of the Coconut palm, save in the Desiccated kernel, the increase in which, however, has not kept pace with that recorded in previous years. It is fair to say that this comparatively new industry of ten years' standing, has probably come to the end of its tether, and that no appreciable increase on the figures just quoted can be reasonably expected. Desiccated coconut is mainly used for confectionery; and as a luxury the demand for it, is incapable of indefinite expansion. Another point to be borne in mind in connection with the palm industry is that it differs from others like tea, coffee, cacao, cinnamon, &c., of which practically the whole crop is exported. The local consumption of coconuts is immense; and, in a prosperous year like the last, cannot fall far short of the number represented by the exports. The exports of the products of the Coconut palm, therefore, represent the total outturn of crop in a far less degree than the exports of our other agricultural products; and to a great extent the exports are regulated by the demand and by prices. Thus both the manufacture and the exportation of Oil, which is the chief product, are regulated by the ruling prices in London and America and the profits realisable from business.

Dealing with the figures for 1898, which were about the largest on record as a whole, we calculated that the exports represented about 400 million nuts as follows:—

		Nuts.
435,933 cwt. Oil represent	..	217,966,500
596,277 cwt. Copra	...	121,506,480
13,040,534 lb. Desiccated	...	39,121,602
Coconuts in shell	...	12,027,714
Total...		390,622,296

The figures for last year, on the same system of computation, taking 500 nuts as averaging 1 cwt. Oil, 240 nuts a cwt. of Copra and 3 nuts a lb. of Desiccated Kernel, the total works out as follows:—

		Nuts.
400,979 cwt. Oil	..	200,489,500
325,401 cwt. Copra	...	78,096,240
13,571,084 lb. Desiccated	...	40,713,252
Coconuts in shell	...	11,723,392
Total...		331,022,384

The difference in exports between the two years is thus represented by about 59 million nuts of the value, at R30 a thousand, of R1,770,000. We have omitted reference in the above tables to Poonac, as it is the refuse after the extraction of the oil from the kernel, and we have credited oil with full 500 nuts. The poonac weighs half the oil; and on that reckoning all the poonac obtained from the extraction of the oil sent away was not shipped—there being a deficit of about 25,000 cwt. That is not matter for regret, as our stock and soil will be all the better for the retention in the island of all the poonac produced. The quantities of coir shipped were much the same as in 1898; but, of course, manufacture and shipments are guided by the demand. We might ship ten times the quantity we do, if only prices were more attractive. The Distribution of Coconut Products is also of interest, and we may have something to say of this in another issue.

COFFEE AND TEA.

It is always a pleasure to see Mr. Fairhurst, of Shanghai, on one of his periodical visits to Ceylon, where he has held estate property for many years. It was in 1877—when "coffee" in Dimbula was supposed to be at the height of its prosperity—that Mr. Fairhurst became proprietor of Ferham plantation with over 240 acres of coffee. Proprietors at that time reckoned their wealth—by counting young coffee in bearing as worth from £60 to £80 per acre in the favourite districts—at many thousands of pounds sterling, but only a few years later, many found themselves ruined. Mr. Fairhurst was fortunate enough to have in Ferham an exceptionally good place where coffee continued to give crops longer than on most places; but still the change in 20 years may be represented by 1,350 cwt. of a coffee crop dwindling down year by year until now it is but 50 *bushels*! Still, tea more than makes up the deficiency, and Mr. Fairhurst sees no reason to dread "blights" so long as cultivation is carefully and liberally attended to. Low-country tea has been scoring for prices lately—just as in the case of China tea, 6d a lb. is given by the large blenders and dealers for tea intrinsically worth 4d, while really good teas do not fetch within 3d of their actual value—but in the long run, Mr. Fairhurst has faith in tea from the higher elevations. He recalls the time when it was said that Ceylon teas at a lower average than 1s or 10d a lb. would never pay, and here we are with more tea than ever at less than eight pence average! The first effect of an advance in the imperial tea duty—say from 4d to 6d a lb.—must inevitably be to check consumption as well as to bother the blending dealers: whether that would give a good chance for independent retailers to cut in, it is difficult to say. Undoubtedly, it was urged during the extra Parliamentary Session that the cost of the war should be provided as soon as possible, and this can only mean a rise in income-tax as well as in tea duty; but it would only be temporary, and allowing for the amount to be levied in South Africa itself, if, as most people expect, the war is over by April or May next, the outlay should speedily be covered.

Mr. Fairhurst leaves for Europe by the Japanese steamer "Awa Maru" on or about Tuesday next.

CEYLON AND INDIAN TEA SHARES—THE MARKET FOR 1899.

The unfavourable features which characterised the year 1898, so far as tea property was concerned, became intensified at the close of that year, and with restricted business in the shares, values—with some few exceptions—dropped and closed at about the lowest point. With the opening of the New Year, 1899, a reaction took place. A belief that the 1898-99 crop would prove short of requirements, owing to the large deficiency, especially in Cachar and Sylhet, caused a smart rise in values of all common teas during the spring, and this resulted in a rebound, upward, in most of the shares. When, however, accounts came to be balanced up it was found that, in many cases, results were much less favourable than had been expected. A few of the larger Assam companies did as well as, or better than 1897-98; but the Assam Company and others panned out much worse. The Dooars district gave satisfactory results; but the Cachar and Sylhet concerns, notwithstanding the help they got from the rise in price at the end of the season, made, for the most part, a very disappointing showing, and the Darjeeling gardens likewise. Owing, however, to certain economies which had been effected, and to a considerable curtailment in extension programmes, the overhead results were not so very much behind those of 1897-98, though very little surplus was carried to reserve. As a consequence, values of shares, from the middle of the year onwards, had a dull and drooping tendency, and the market for them was restricted. In the late autumn a more cheerful feeling supervened, helped by a fairly good market for the produce, and by a smart recovery in the output from the Cachar and Sylhet districts—*the stricken field* of the past two years!

A feature of the year was the dispute between buyers and sellers in July last regarding the conditions of sale, full particulars of which have appeared in our columns. Though the smooth working of the trade has been interfered with, it is believed that benefit will eventually result to all concerned by the ventilation of abuses, and that means may ultimately be found to abolish some of the evils connected both with the warehousing and Customs systems.

The opening up of new fields of consumption of Indian and Ceylon tea progresses slowly, but steadily, Russia and the European continent generally now, at last, showing an advance in this respect in addition to the Australasian, American, and African continents.

The Indian rupee question has, in great measure, ceased to trouble the minds of tea planters, and the decision of the Indian Government to adopt a gold standard has been tacitly acquiesced in. There are indications that the tea industry will be able to adapt itself to the altered currency conditions.

There has been no further flotation of new companies, but some minor additions to already existing capitals. The Consolidated Tea and Lands Company, besides making an issue in August of £550,000 of 4 per cent. Debentures, called £2 per share from its shareholders, amounting to £120,000, and the Amalgamated Company obtained £95,000 by a similar call on its ordinary capital. The Ceylon Land and Produce Company made a call of 10s. per preference part paid share, amounting to £3,200, and also issued £10,750 of new fully-paid 6 per cent preference capital, while the New Dimbula Company reconstructed its old complicated £86,000 of capital by an issue of £79,000 of new £1 shares (a slight reduction!)

A marked feature in the Share Market has been the disfavour into which the issues of the two large Glasgow companies have fallen, owing to the fresh issues and calls (above alluded to) being made at an inopportune moment, when shareholders did not wish to increase their commitments in tea.

Another feature has been the great restriction in dealings in the shares of a large number of the Ceylon companies, other than the bare dozen of lea ing ones.

Closing prices of shares show, for the most part, a moderate rise from the lowest point, though, as compared with a year ago, they show some irregularity. The financially strong companies and the Sylhet concerns show the most recovery.

CEYLON SHARES (for comparison).

Year 1899.

Company.	Jan.	Top.	Bot.	Dec.	Rise.	Fall.
Ceylon T Plant Ord.	24	27	23½	25	1	..
Ceylon T Plant Pref.	16¾	18	16¼	17	¼	..
Dimbula Valley Ord.	5½	6½	5	5¾	¼	..
Eastern Produce Co.	5⅞	6⅝	5¾	5¾	..	⅛
Standard £6 pd	12	12¾	11	11½	..	½

PRODUCE AND PLANTING.

THIBETAN TRADE.—The report for the past year of the Commissioner of Chinese Customs at Yatung, in the Chumbi Valley, the town opened to Indian trade with Thibet, shows the growth of trade at the place for the four years it has been opened, no duties of any kind being levied during that period. The Commissioner doubts whether, when the duty is imposed, the trade will be able to bear it, and whether it will not take some other route.

DEVELOPMENTS IN TRANS-CAUCASIA.—In addition to the cultivation of tea, the Russian Imperial authorities have introduced viticulture. Last year the area under the vine in all Trans-Caucasia was 250,675 acres, from which over 17 millions of gallons of wine were obtained, besides grapes sold in the local markets and used for distillation, the total of which amounts to about 108,000 tons. Most of the wine is consumed locally, and is of inferior quality, for the growers are poor, and cannot afford to keep it in stock to mature. Cotton of good quality is growing in great abundance both in Trans-Caucasia and Central Asia, and finds its way to the Russian markets. The silk industry, also, is growing, but it is affected by the poverty of those engaged in rearing the worms, so that last year more than half the latter had to be destroyed in the second and third stages of their growth, as their owners were unable to buy leaves for their food. The cultivation of liquorice, which was an important industry in certain districts, is giving place to cotton and rice, so that the factory-owners last year had to pay higher prices.

CHINA AND THE PARIS EXHIBITION.—The Chinese section of the Paris Exhibition is under the control of Sir Robert Hart and the Maritime Customs, there being only one private exhibitor, a well known curio dealer from Pekin. Special efforts will be made to make the section especially interesting, and the tea industry will be to the fore. An officer of the Customs, M. Vapereau, has been in Paris for some months past getting the section into order. The position is not a central one, for it is in the gardens near the end of the eastern wing of the Trocadero, but the slope of the ground and the large trees afford an opportunity for effect. There will be a four-storeyed pavilion, sixty feet high, covering about 400 square yards, and with a lake in front. One of the floors of the pavilion will contain a Chinese theatre and restaurant, while the exhibits will take up two of the floors. There are to be three smaller pavilions, and a row of Chinese shops with men at work.

CHANGES IN MAURITIUS.—The report of Sir Graham Bower, Colonial Secretary of Mauritius, which has recently been issued, draws attention to "a steady but absolutely sure change" that is taking place in the population of the island, which is likely to have important social, political, and economic results. Thirty years ago Port Louis, the capital, was a European town to all intents and purposes: now the greater part of it has passed into the hands of either Indians or Chinese. The change does not stop with the town, for a process of morcellement is going on in the sugar estates, many of the old French sugar planters parting with their lands to Indians, who last year, in spite of the general financial depression of the colony, purchased nearly 15,000 acres for over two millions of rupees. The purchasers numbered 1,427, of whom 485 were originally immigrants, introduced at the expense of the colony. During the last four years East Indians spent over seven millions of rupees in purchasing land, and it is estimated that about a third of the total sugar crop is grown by these small proprietors. The economic effects of this change, say Sir Graham Bower, have yet to be ascertained; a peasant proprietor is, as a rule, less able to bear the vicissitudes incidental to agriculture than a capitalist proprietor employing labourers at fixed wages. When disaster comes, it is more widespread with peasant proprietors, and disaster is always possible in a country so frequently visited by hurricanes. Besides the financial supporters of a peasant proprietary are usually a small and unscrupulous money-lender class. "But, whatever the economical problem may be, the political and social consequences are apparent."

COFFEE & TOBACCO CULTIVATION IN QUEENSLAND.—In the Treasury annual report it is mentioned that the laying down of plantations is gradually increasing, with a tendency to develop rather within the tropics than in the semi-tropical regions. The products that have been sent home, though from first crops and dressed with, in many cases, makeshift appliances, have met with encouraging encomiums from merchants in London. An instructor in coffee culture has been appointed, and with his advice and assistance it is thought that before long Queensland-grown coffee will have a place in the London markets. According to the Registrar-General's statistics there were under coffee in 1896, 138 acres; 1897, 311 acres; 1898, 432 acres. The actual area planted has been ascertained to be considerably larger, but of the area under crop 199 acres only were in full bearing, the production from which was 56,552 lb. Our imports of raw and roasted coffee totalled 179,681 lb., of the value of £7,304, so that there is yet a considerable margin for local wants to be supplied before the export trade can be commercially reached. The appointment of an instructor in the art of cultivating tobacco has been well justified by the renewed attention that has been paid to this crop during the year; and it is intended—should this harvest be a favourable one—to test the London market upon a scale that will command the attention of the European merchants.—*H. and C. Mail*, Dec. 29.

WYNAAD PLANTING NOTES.

NILGIRI-WYNAAD, Jan. 8—The past two months, with the exception of a slight drizzle in December, have been quite rainless. Water is said to be getting scarce in some parts, and springs and rivers are all very low. It is safe to say that no one can remember them having been lower.

The picking of coffee crops will soon be almost over. What the quality will turn out to be, we do not yet know, but the bean runs larger, whatever its actual weight may turn out. With abnormal seasons it seems scarcely reasonable to expect a uniform good average quality, although some estates, as was so conspicuously the case last season, may be quite up to standard. Estimates will mostly be reached, and in some cases exceeded, especially in the Ouchterlony Valley, where a few estates are picking up to 35 and 50 per cent. of their big crops of last year.

The proposal of the Director of the Government Cinchona Plantations, to fell a large block of forest at the head of the Ouchterlony Valley, owing to the appeal of the proprietors of property in the valley to His Excellency the Governor strongly protesting against it, is not likely to be carried out. It is understood that His Excellency will give the matter his sympathetic consideration, and it is rumoured that the proposal has been dropped.

I believe there are now five European miners resident in Devala and Pundalur—a beginning at least of a revival of gold mining. The whole of the District is without any hospital accommodation for Europeans.—*Madras Mail*, Jan. 12.

THE VANILLA CROPS.

Mr. J. S. Simon, of Paris, has issued his annual report on the vanilla-crops for 1898-99, and, as foreseen by him, the returns have been—

		Kilos
Seychelles	..	24,500
Madagascar, &c.	..	13,000
Bourbon	..	77,500
Total	..	115,000

In 1897-98 the crops amounted to 180,000 kilos. (including 125,000 from Bourbon), so that there has been a shortage of 6,500 kilos. As to the 1899-1900 crop, competent judges are not agreed, and it is difficult to say anything with regard to Bourbon before the end of the year. The persistent drought of last year has had a bad effect upon the vanilla plantations, and the cyclone in March has much modified the expected production after the dropping and death of the trees. Some planters say that the production will not exceed that of last year; others fore see a crop of from 90,000 to 110,000 kilos., but an average figure would be 100,000 kilos. The Seychelles Islands are estimated to produce 5,000 kilos. less than last year. On the other hand, Comores is expected to yield a better return. In admitting 100,000 kilos from Bourbon, there will be an increase of only 2,000 kilos. on the total production. In Mexico the crop has been good, but quality is not satisfactory. In Europe, Mexican beans are of little acconnt, first quality being quoted from 150f. to 200f. per kilo., according to quality. The last crop from Tahiti has been very large, and prices have declined owing to the special flavour that can be used only by a limited number of buyers. The actual stocks in Paris and Bordeaux of Bourbon beans are 20,000 kilos. against 45,000 kilos. at the same time last year. The selection offered is not complete, and the cheap, short, common, and split sorts are not to be had. Hamburg has an insignificant stock, and London has very little. Prices have been advancing throughout the year from 55f. to 75f. net per kilo. for first quality, middle length 17 cm. The first lots prepared were sold at 60f. for Bourbon, and a few days since 62·50f. was paid, representing the parity of the net quotations in Europe. Seychelles vanilla is inquired for more than ever, and has reached hitherto unknown prices. The present stocks are not sufficient to last until the end of the year, and the first arrivals of the new crop will be quickly dealt with. At the London auctions prices have been constantly advancing and the demand has been good. Concluding, present quotations are likely to be well maintained, the prospects for the second part of the season depending on the amount of the Bourbon crop, prospects on the future crop, and, lastly, the general demand for consumption. The flowering of Seychelles vanilla is very short, and as already tated, the next crop will be a small ones.—*Planting Opinion.*

COFFEE-GROWING ON THE CLARENCE.

Mr. John Bale, of the Chatsworth experimental station, Clarence River, has supplied me with some interesting notes on coffee-growing. Mr. Bale says; —" I was very much interested in the notes on coffee in Queensland which appeared in the special number of the 'Mail,' October 21. I have taken some interest in the subject for some 15 years past. Coffee was grown on the Clarence in 1848, but very little was planted prior to 1894. Some was manufactured in 1898, and sold at 1s 6d per lb. In that year we collected 5,500 lb. of berries, and made 900 lb. of coffee. This season we have to date 310,080 lb., and the dried berries are very good as compared with those of last season, doubtless because both rain and sun have been in our favour. The roasted coffee is now first-class. The output will be treated at the farm, and will all be disposed of on the Clarence, in fact, a much larger quantity could be sold locally. I observe that the cost of picking the berries in Queensland is very different to that usually ruling on the Clarence. A boy 12 years of age, can pick 100 lb to 120 lb. of berries in a day. Take the average to be 110 lb. This should give 23 lb. of coffee-beans, or about 138 lb. coffee-beans for a week's work at a cost of 12s per week, or 1d per lb. A boy and a girl will pick all my present crop of two acres, and the picking will last into next month. We do all the pulping with a wooden roller turned in a trough on an incline, so that the berries keep a peel by rolling under the roller as it revolves. The coffee is dried, and the parchment work is completed with a U.S.A. No. 750 bean mill, which cost £1 10s. The revolving roaster was made on the farm from a large oil drum. A Coffee mill which costs £2 will grind 2 lb. per minute. With regard to the question as to whether the industry will pay, a great deal depends on whether the State is prepared to assist the small growers so that the capitalist shall not have too large a share of the profits. Coffee at 1s per lb. should pay well, provided the growers obtained their fair proportion of the proceeds, bnt the exactions of the middleman retard development in this as in all other industries which have to grow from very small beginnings."—*Sydney Mail.*

THE LONDON COCOA MARKET.

[BY HAROLD HAMEL SMITH.]

Noticing several piles of Trinidads of late were being sold from " redrawn samples," as well as the original ones taken by the docks when the cocoa was first landed, I made enquiries to try and find out why the second samples had been drawn and were being shown together with the original samples on the counter. The reason given was that this year, owing to the spell of heat we had from the beginning of June to the end of August some of the Trinidad cocoa showed signs of becoming " wormy"; a very unusual thing with this growth; and so buyers wishing to bid for a pile that had lain at the Docks since May, that is during the hot weather, asked for redrawn samples so as to be able to judge whether the cocoa showed signs of becoming wormy or not. This precaution it seems is not only taken by the buyers, but by the sellers and manufacturers as well, all being anxious to ascertain from time to time how the weather has affected their stock.

I was unable to make out what is the real cause of this "worminess." The actual cause is "eggs." But then where do the eggs come from, and are they always there, or only dnring the hot spells of weather. Some seem to think they come over in the Cocoa, and only hatch out with very warm weather. Another very reliable authority believes it to be due to insufficient air, or other causes, on the voyage; and gave as a proof that a pile of a well-known brand of Trinidad cocoa was shipped in two lots, and though on landing, the Cocoa to all appearances was identically the same, the first lot soon showed signs of becoming " wormy," whilst the last lot receivvd remained sound to the end. Another reason given was that perhaps the beans not being as well washed and free of mucilage as they might be, owing to the heat fermentation set in, and attracted the insect that lays the eggs, and it is for this reason that Guayaquil, which always has a good deal of dried mucilage attached to the skins, is very liable to become wormy, more so in fact than any other growth, whilst Grenadas are almost, if not entirely free from the nuisance. On the other hand, dealers in Ceylon tell you that they have known the same thing happen with Ceylon Cocoa, which is the driest and cleanest of all Cocoas, so that the cause of the mischief has yet to be discovered, and the sooner this is done the better, for it causes the grower to lose money, and the merchant or buyer much anxiety to know how the cocoa is being affected by the weather; and I am told the Government will

have nothing to do with any Cocoa that shows the least sign of becoming "wormy," and not to alienate such a good customer is in itself worthy of all the attention that can be given to the matter.

The Government not being buyers this week, and the trade still being reluctant to buy publicly, no Cocoa Sales were held to-day; however, from all reports this has been by no means an idle fortnight, over 7,000 bags are reported as having changed hands, besides "several hundred" bags, particulars of which were not published. The following figures will show the rate at which Cocoa is going into consumption during October—1899-1898.

Imported	... 1,163	tons ...	1,273 tons.
Delivered	... 2,127	,, ...	1,806 tons.

So that this year the deliveries during October alone exceeded the Imports by 964 tons, against only 503 tons last year.

On seeing the rate of increase in the consumption of Europe one is not surprised at the rapidity with which cocoa is being taken up; here are the figures showing the increase in the consumption during the last five years.

England consumed 15,530 tons in 1898-99, against 10,445 tons in 1894-95, increase about 50 %; France consumed 17,230 tons in 1898-99, against 14,630 tons in 1894-95, increase about 20 %; Germany consumed 18,656 tons in 1898-99, against 9,447 tons in 1894-97, increase about 100 %; Holland consnmed in 1898-99; 15,132 tons, against 8,664 tons in 1894-95, increase about 80 %; and even Spain, hard up as she is, consumed 6,424 tons this year, against 4,481 tons in 1897-98.

Mr. Edward Kynaston sums up the position very accurately when he says:—"The home consumption of Cocoa as indicated by the Board of Trade returns, continues to show a steady expansion. On the Continent also the consumption is known to be extending, and the large production everywhere has met with a ready outlet, and has not entailed any undue accumulation of stocks. We shall commence next year with reasonable stocks, and if it is quite possible, crops do not turn out phenomenally large, as they have done this season, present prices, satisfactory as they are, may well become subject to a further increase. A cold winter following two mild ones will make a great difference in the consumption of Cocoa as a beverage, and estate owners may look forward with confidence to the coming season.

The following are the stocks at the undermentioned ports:—

	1898.			1899.	
London	108,313	bags	..	97,618	bags
Liverpool	1,735	,,	..	2,733	,,
Havre	95,729	,,	..	123,209	,,

The Havre stock includes 23,107 bags of Trinidads.
—*Port of Spain Gazette.*

PLANTING NOTES.

THE EARTH ONION.—Both the *Geographical Journal* and he *Scottish Geographical Magazine* for October publish Sir John Murray's presidential address on Oceanography, delivered to the Geographical section of the British Association, says the *Review of Reviews.* From the results i t appears that considerably more than half of t sea-floor lies at a depth exceeding 2,000 fatho or over two geographical miles. A good deal o f geology is packed up in the following paragraph and its homely comparisons:—

When we regard our globe with the mind's eye, it appears at the present time to be formed of concentric spheres, very like, and still very unlike, the successive coats of an onion. Within is situated the vast nucleus or *centrosphere*; surrounding this is what may be called the *tektosphere*, a shell of materials in a state bordering on fusion, upon which rests and creeps the *lithosphere*. Then follow *hydrosphere* and *atmosphere*, with the included *biosphere*. To the interaction of these six geospheres, through energy derived from internal and external sources, may be referred all the existing superficial phenomena of the planet.

TEA PLANTING IN THE MATALE VALLEY—has long been known to be very profitable and several favoured estates have, in some years, run the far-famed Gampola Valley premier plantation very close in respect of yield. Mr. H. Storey, of Warakamure, has in this way placed on record in our "Handbook and Directory" that he has got up 993 lb. and 1,066 lb. per acre of made tea, *without manure*—a wonderful result. In answer to an appeal, Mr. Storey has now supplied our contemporary with a full return for 8 years—curiously enough since manuring set in, the yield has fallen, owing to unfavourable seasons with droughts:—

Year.	Plucking Aver'ge.	Yield per Acre.	Rainfall.	Remarks.
1892	80	688	76·90	
1893	194	695	59·78	
1894	194	702	60·89	
1895	194¼	812	87·24	No manure.
1896	198	99	104·06	
1897	204¾	1066	98·95	
1898	206	720	64·31	manured 60 ac.
1899	213	907	88·31	,, other 60 acres.

The very serious droughts of 1898 did a great deal of damage to crop and to the tea also, and it has taken the whole of the last year, with very careful treatment, to bring the tea round again. I am glad to be able to say, however, that now I have never seen the tea looking better. A very unusual drought during the height of the S. W. monsoon last year, and a very unsatisfactory December, affected my yield considerably as I had confidently expected 1,000 lb. per acre. Two of my neighbours run me very close in yield, and I believe several other estates, north of Matale, can show very fine yield returns.

RAINFALL RETURN FOR COLOMBO.

(Supplied by the Surveyor-General.)

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897	1898	1899	Av of 29yrs.	1900
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch	Inch	Inch	Inch.	Inch.	Inch.
January ..	0·81	1·45	7·39	5·42	0·62	5·00	2·92	3·81	2·32	6·98	3·09	0·16*
February ..	4·36	2·81	5·32	2·36	0·52	0·81	0·35	1·68	1·98	2·78	1·90	
March ..	5·34	9·43	1·52	5·15	7·44	1·84	5·64	3·66	4·21	0·88	4·92	
April ..	14·27	5.93	13·92	20·39	12·51	9·34	5·93	10·97	22·81	6·66	11·47	
May ..	6·48	17·65	3·00	10·32	3·00	10·09	9·31	8·30	5·80	17·73	11·89	
June ..	1·87	9.79	6·62	11·01	11·32	13·99	8·37	10·14	10·94	9·23	8·34	
July ..	3·32	4·59	1·10	2·20	1·72	0·52	2·85	5·24	6·15	1·11	4·49	
August ..	0·73	1·65	1·86	1·01	0·86	0·92	6·35	9·09	0·97	0·62	3·77	
September	1·50	4·42	1·14	1·99	0·78	4·09	10·99	4·58	6·90	1·48	5·13	
October ..	13·33	35·28	12·24	5·59	20·81	30·36	16·78	4·71	20·60	12·99	14·57	
November..	12·32	18·37	5·86	18·10	14·63	5·83	19.81	11·66	17·38	8·58	12·80	
December..	8·47	7·66	0·86	6·13	3·25	9·44	11·76	8·89	3·05	4·44	6·45	
Total..	72·80	119·03	60·83	89·67	77·46	92·23	101·06	82·73	103·11	73·48	88·82	0·16

*From 1st to 9th Jan. 0·16 inch, that is up to 9·30 a.m. 10th Jan.—ED. C.O.

Ceylon Rainfall.

THE P. W. D. METEOROLOGICAL OBSERVATIONS FOR Nov. 1899.—We append this Monthly Return of rain from which it will be seen that the highest fall was at Allai in the Eastern Province, 50·30 inches and the lowest at Mylapitiya in the Central Province 2·65 inches.

WESTERN PROVINCE.

Negombo. Mr. Bucknall (6) ... 8·68
Kalutara Mr. Gregson (36) ... 11·83
Labugama. Mr. Bond (369) ... 15·59
Henaratgoda, Mr. Silva (33) .. 16·18

CENTRAL PROVINCE.

Katugastota. Mr. Morgan (1,500) ... 5·59
New Valley, (Dikoya) Mr. Ward (3,700) .. 6 05
Yarrow Estate, Mr. Peto (3,400)... 8·06
Peradeniya Mr. MacMillan (1,540) ... 3 90
Duckwari, Mr. Edwin (3,300) ... 7·25
Caledonia, Mr Goork .. (4,273) .. 4·27
Pussellawa. Mr. Powell (3,000) .. 4·94
Hakgala, Mr Nock (5,581) ... 8·84
S. Wanarajah Estate, Mr. Tatham (3,700) .. 5 30
St. Andrew's (Maskeliya), Not received (4,200).. —
Padupola. Mr. Ward .. (1,638) ... 5·11
Mylapitiya, Mr Rowland (1,707) ... 2·65

NORTHERN PROVINCE.

Mullaittivu. Mr. Sanmukam (12) .. 20·68
Jaffna Mr. MacDonnell (8) 9 37
Mankulam, (N. Road) Mr. Walker (167) ... 22·83
Elephant Pass, Mr .. Silva (7) ... 31·01
Vaugalachettykulam, Mr. Oorloff (179) .. 11·80
Point Pedro, Not received (24) ... —
Jaffna College, Mr. Cooke (9) ... 18·59
Kayts, Mr. Kretser .. (8) .. 16·28
Kankesanturai, Mr. .. Adams (10) ... 11·91
Pallai, Mr. Silva (24) .. 8·55
Murikandy, (North-Central Road) Mr. Silva — 19·10
Nedunkeni, Mr. Sanmukam (122) ... 35·20
Chavakachcheri, Mr. Silva (16) ... 12·33
Udupiddi, Mr. Hastings (85) .. 14·18
Marichchukaddi, (14) Mr. Thamotharampillay 10·65
Murungan, Mr. Blechingberg (52) 13·49
Vavuniya Mr. Walker (318) 14·11

SOUTHERN PROVINCE.

Ella Vella (262) Mr. Smith 9·66
Kekanadura, (150) do 2·81
Denagama, (286) do 9·15
Udukiriwila Mr. Lourensz (235) .. 4·85
Kirama, Not received (260) —
Hali-ela (200) Mr. Smith 17·10
Tissamaharama, Mr. Peries (75) .. 3·79
Matara (15) Mr. Smith 6·32
Dandeniya, (157) do 3·89

Urubokka, Mr. Smith (890) .. 8·60
Elagala, Not received (121) —
Taugalla, (94) Mr. Barttlet .. 5·81
Mamadola, Mr. Cade (56) ... 3·77

EASTERN PROVINCE.

Irrakkamam, (42) Mr. Bower ... 14·35
Devilana, Mr. Vauderstraaten (136) 16·40
Sagamata, Mr. Bower (40) ... 8·15
Ambare, do (65) 15·68
Kanthalai, Mr. Carte (150) 6·50
Allai, Mr. Carte (95) 50·30
Rukam, Mr. Vanderstraaten (120) ... 13·40
Periyakulam, Mr. Carte (20) ... 11·15
Chadaiyautalawa, Mr. Edge (57) .. 16·27
Kalmunai, do (12) 1·31
Rotewewa, do (30) 10·35
Lahugala, do (70) 6·50
Naulla, do (39) 6·30
Andankulam, Mr. Carte (41) ... 11·95
Manalpuddy, Mr. Vanderstraaten (21) 11·25
Maha-Oya-Tank. Mr. Vanderstraaten (190) 18·10

N.-W. PROVINCE.

Magalawewa, Mr. Gunaratna (176) .. 4·20
Maha Uswewa tank, Mr. Crabb (160) ... 3·79
Tenepitiya. Mr. Churchill (8) ... 6·12
Batalagoda, Mr. Fonseka — 3·41

N.-C. PROVINCE.

Kalawewa, (268) Mr. Carson 8·36
Maradankadawala, Mr. Carson (443) ... 9·83
Mihintale, Mr MacBride (354) .. 11·83
Horowapotana. Mr. MacBride (217) .. 22·30
Madawachchiya, Mr. MacBride (285) .. 11·05
Topare, (200) Mr. Jayawardane ... 12·61
Miuneriya — Mr. Eves 13·05

UVA PROVINCE.

Bandarawela, Mr. Tocke (4,000) ... 4·47
Haldummulla, Not received (3,160) .. —
Kumbukan, (446) Mr. Emerson ... 6·01
Koslanda, (2,258) Mr. Emerson ... 13·71
Tanamalwila, Not received (550) .. —
Bibile, Mr. Silva (680) 10·56
Taldena, Mr. Fernaudo (1,100) .. 11·94
Allutnuwara—Mr. Leembruggen 19·10

SABARAGAMUWA.

Ambanpitiya, Mr. Caldicott (729) 3·88
Pelmadulla, Mr. Clarke (408) 5·91
Kolonna Korale (Hulanda-oya) (203) Not received —
Avisawella, Mr. Jeffery (105) 10·65

S. G. O. METEOROLOGICAL OBSERVATIONS FOR JULY, 1899.

The following is the return of the total fall of rain for July, from which it will be seen that the highest fall was at Labookellie, Ramboda, 32·95 inches, and the lowest at Batticaloa. 0·10 inches.

Colombo (40) 0·38
Ratnapura (84) 5·27
Puttalam (27) 0
Anuradhapura (295) 1·72
Mannar (12) 0
Jaffna 9 0
Trincomalee (12) 2·08
Batticaloa (26) *0·10*
Hambantota (50) 0·50
Galle (48) 4·85
Kandy (1,654) 5·06
Nuwara Eliya (6,188) 8·43
Hakgala, Nuwara Eliya (5,581) 6·00
Badulla (2,225) 0·51
Vavuniya (317) instruments removed
Kurunegala (381) 1·29
Maligakanda, Colombo Mr. Johnson (70) 1·26
Agricultural School Colombo, Mr. Rodrigo 0·66
Welhelmina Puttalam, Mr. Ratnayeke (131) —
Horakele Estate. Chilaw, Mr. Beven (50) 0·88
Chilaw Kachcheri Chilaw, Mr Koch (10) 0
Franklands Estate —
Veyangoda, Mr. Beven 4·10
Orange Hill, Ragama Mr. Bury (50) 1·15
Henaratgoda Gardens, Henaratgoda, Mr. de Silva (33) 0·97
Kotua Godella, Rambukana Mr. Windus (550) —
Eadella or Liberia Estate Polgahawela Mr. Craighead (425) 3·02
Geekianakanda, Neboda —
Mr. Towgood (200) —
Polgahakanda, Neboda Mr. Wight (300) 3·56
Labugama. Hanwella. Mr. Bond (369) 5·37
Rayigam, Horana, Mr. Dawson, (300) 3·95
Kanangma, Avissawella Mr. Cooke (200) 8·29
Dunedin Estate, Avissawella, Mr. Bayley, (400) 5·37
Digalla Avisawella, Mr. Tottenham, (400) 8·81
Pambagama, Avisawella. Mr. Bridgman (600) 7·71
Avisawella Estate Avisawella Mr. Byrde (250) 6·53
Yatideriya, Kegalla, Mr. Fairweather — 8·06
Mahawalatenna, Balangoda Mahawalatenna R. M. — 1·38
Agarsland Estate Balangoda Mr. Boyd (2, 15) —
Maduwanwala, Rakwana, Maduwanwela R.M. (750) 1·40
Anninkanda, Morawaka, Mr. Anderson, (1,400) 7·07
Panilkanda, Morawaka, Mr. Davidson (1,900) 5·75
St. John Del Rey, Bogawantalawa Mr. Glanville (4,300) 9·45
Friedland, Bogawantalawa Mr. Rammell (5,200) 8·29
Campion, Bogawantalawa. Mr. Gidden, (4,840) 9·29
Blair Athol, Dikoya, Mr. Lane (3,641) 20·14
Annfield, Dikoya, Mr. Knight (4,300) 15·66
Maskeliya Hospital, Maskeliya Mr. Bulner (4,200) 15·91

Hope Estate, Hewaheta, Mr. Bagot (5,000) 8·24
Coldstream Estate, Watawala Mr. Speeding (3,800) 24·38
Holmwood Est., Agrapatana, Mr. Gray (5,240) 11·51
Sandringham, Agrapatana Mr. Orchard (5,200) 8·01
Gingran-oya, Kotmale, Mr. Cox (3,800) 17·75
Labookelle, Ramboda, Mr. Stone (5,000) *32·95*
Dunsinane, Pundalu-oya, Mr. Metcalfe 4,800 16·95
Sogama, Pusselawa, Mr. Eustace (3,500) 6·94
Kurundu-oya, Maturata, Mr. Corbetta (5,150) 2·50
Kabaragalla, Maturata, Mr. Maclean (4,200) 13·27
Maragalla Estate, Moopana, Mr. Betts, (2,200) 2·50
Moopana, Hospital, Moopana (Mr. Sela) (600) 0·95
Madulsima Hospital Lunugala Dr. Vethecan (2,400) 2·90
Meeriabedda. Haputale, Mr. Dupuis (3,600) 2·90
Udahena Estate, Haputale, Mr. Bisset, (4,500) 1·72
Post Office, Bandarawela, Mr. Mendis (4,035) 0·21
Callander, Ohiya Mr. Green (5,125) —
Mariawatte, Gampola Mr. Salmond (1,600) 5·26
Orwell Estate, Gampola Mr. Taylor (1,800) 4·98
New Forest, Deltota, Mr. Wardrop (3,500) 4·94
Rajawella. Estate, Telleniya Mr. Miller, (1,500) 2·65
Lower Spring Valley, Badulla Mr. Rettie (3,650) 2·45
Gourakele Estate, Badulla Mr. Hope (4,200) 3·97
Mousagala Estate, Badulla, Mr. Deaker (4,500) 2·59
Ledgerwatte, Badulla Mr. Rettie (4,000) 1·56
Dea Ella Estate, M'walatenna Mr. Vanderslott (800) 4·80
Sembawatte Estate, N'pitiya Mr. Roe (1,600) 21·52
Gammaduwa, Estate, Rattota Mr. Westland (2,400) 4·34
Kobonella Estate, Raugala, Mr. Pole (3,300) 6·73
St. Martins, Rangala, Mr. Wyllie (3,600) —
Crystal Hill, Matale, Mr. Van Strex (1,400) 8·21
Vicarton Estate, Matale Mr. Carrie (3,250) 6·70
Matale Mr. Tisseverasinghe (1,208) —
Warlapolla, Matale, Mr. Dickenson (1,200) 3·83
Dambulla, Mr. Sinnetamby (400) 0·41
Kotta Estate, Pallal, Mr. Todd (13) 7·14
Mantota Hospital, Mannar. Mr. Adams (17) 0
Buttala Hospital, Buttala, Mr. Somasundrum — 0·60
Police Station, Hatton Police Constable Miskin (4,141) 21·59
Medway Estate Nilaveli, Mr. Abraham, .. 4·31
Delwita, Kurunegala Mr. Neame (490) 2·69
Woodside, Uragalla Mr. MacMahon (3,000) 2·52
Gillardstown, Wattegama Mr. Hardy (2,500) 4·81

SHARE LIST.

ISSUED BY THE

COLOMBO SHARE BROKERS' ASSOCIATION.

CEYLON PRODUCE COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Agra Ouvah Estates Co., Ltd.	500	900	1000	—
Ceylon Tea and Coconut Estates	500	—	500 n'l	..
Castlereagh Tea Co., Ltd.	100	..	95	95
Ceylon Hills Estates Co., Ltd.	100	—	30	..
Ceylon Provincial Estates Co.	500	..	500	..
Claremont Estates Co., Ltd.	100	..	25	—
Clunes Tea Co., Ltd.	100	—	100	—
Clyde Estates Co., Ltd.	100	—	70	—
Doomoo Tea Co., Ltd.	100	60	—	—
Drayton Estate Co., Ltd.	100	150	—	
Eila Tea Co., of Ceylon, Ltd.	100	62·50	—	...
Estates Co., of Uva, Ltd.	500	—	300	280
Gangawatta	500	—	..	—
Glasgow Estate Co., Ltd.	500	925	..	—
Great Western Tea Co.,	500	—	640	640
Hapugabalande Tea Estate Co.	200	—	275	..
High Forests Estates Co., Ltd	500	—	570	570
Do part paid	350	—	..	410
Horekelly Estates Co., Ltd.	100	—	—	..
Kalutara Co., Ltd.	500	390	..	—
Kandyan Hills Co., Ltd.	100	—	70	
Kanapediwatte Ltd.	100	..	95	95
Kelani Tea Garden Co., Ltd.	100	40	50	40
Kirklees Estates Co., Ltd.	100	—	145	—
Knavesmire Estates Co., Ltd.	100	—	—	—
Maha Uva Estates Co., Ltd	500	—	500	
Mocha Tea Co., of Ceylon, Ltd.	500	625	—	..
Nahavilla Estate Co., Ltd.	500	—	475	475
Neboda Tea., Co. Ltd	500	500	..	—
Nyassaland Coffee Co. Ltd.	100	—	..	..
Ottery Estate Co., Ltd.	100	..	—	—
Palmerston Tea Co., Ltd.	500	—	400	
Penrhos Estates Co., Ltd.	100	—	100	..
Pine Hill Estate Co., Ltd.	60	—	50	..
Pitakanda Tea Company	500	1,000	—	..
Putupaula Tea Co., Ltd.	100	—	120	.
Ratwatte Cocoa Co., Ltd.	500	—	—	..
Rayigam Tea Co., Ltd.	100	—	70	—
Roeberry Tea Co., Ltd.	100	45	50	—
Rnanwella Tea Co., Ltd.	100	—	70	..
St. Heliers Tea Co., Ltd.	500	500	—	500
Talgaswela Tea Co., Ltd.	100	25	—	...
Do 7 per cent. Prefs.	100	...	..	..
Tonacombe Estate Co., Ltd.	500	—	450	—
Udabage Estate Co., Ltd.	100	..	—	—
Udugama Tea & Timber Co., Ltd.	50	5	10	..
Union Estate Co., Ltd.	500	—	300	—
Upper Maskeliya Estate Co., Ltd.	500	..	500	—
Uvakellie Tea Co., of Ceylon, Ltd.	100	...	70	...
Vogan Tea Co., Ltd.	100	90	92½	90
Wanarajab Tea Co., Ltd.	500	—	1145	..
Yataderiya Tea Co., Ltd.	100	—	400	400

CEYLON COMMERCIAL COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Adam's Peak Hotel Co., Ltd.	100	40	50	—
Bristol Hotel Co., Ltd.	100	—	87½	87½
Do 7 per cent Debts.	100	105	—	
Ceylon Gen. Steam Navgt. Co., Ltd.	100	..	205	.
Colombo Apothecaries Co., Ltd	100	137½	—	135
Colombo Assembly Rooms Co., Ltd.	20	12 50	..	—
Do prefs.	20	—	..	..
Colombo Fort Land and Building Co., Ltd.	100	..	90	..
Colombo Hotels Company	100	300	303	—
Galle Face Hotel Co., Ltd.	100	—	..	..
Kandy Hotels Co., Ltd.	100	..	112½	112½
Kandy Stations Hotels Co.	100	..	30	—
Mount Lavinia Hotels Co., Ltd.	500	—	300	..
New Colombo Ice Co., Ltd.	100	—	172½	172½
Nuwara Eliya Hotels Co., Ltd.	100	25	27½	—
Public Hall Co., Ltd.	20	15	—	—
Petroleum Storage Co.	100	—	—	—
Do 10 % prefs.	100	—	...	—

* LONDON COMPANIES.

Company.	paid p. sh.	Buyers.	Sellers.	Transactions
Alliance Tea Co., of Ceylon,	10	8—9	—	..
Anglo Ceylon General Estates Co.	100	—	45·50	..
Associated Estates Co., of Ceylon	10	—	..	—
Do. 6 per cent prefs.	10	—	7½	..
Ceylon Proprietary Co.	1	—	12·6—17 6	.
Ceylon Tea Plantation Co.,	10	—	25—26	..
Dimbula Valley Co.,	5	—	5½—5¾	..
Do prefs.	5	—	..	—
Eastern Produce and Estates Co.,	5	—	6¼	..
Ederapolla Tea Co.,	10	—	7—8	..
Imperial Tea Estates	10	—	5-6	..
Kelani Valley Tea Asson.,	6	—	5—6	..
Kintyre Estates Co.,	10	—	..	—
Lanka Plantation Co.,	10	4½	5—6	..
Nahalma Estates Co.,	1	—	¼—¾	..
New Dimbula Co.,	1	—	2½—3	..
Nuwara Eliya Tea Estate Co.	10	9¼	—	—
Ouvah Coffee Co.,	10	7	—	..
Ragalla Tea Estates Co.,	10	—	10	..
Scottish Ceylon Tea Co.,	10	—	14—16	.
Spring Valley Tea Co.,	10	3	4—5	..
Standard Tea Co.,	6	—	..	—
The Shell Transport and Trading Company,	100	—	250	227
Yatiyantota Ceylon Tea Co.,	10	—	8-9	..
Yatiyantota pref. 6 o/o	10	—	9¾—10¼	..

BY ORDER OF THE COMMITTEE

Colombo, January 12th, 1900.

THE LOCAL MARKET.

(By Mr. James Gibson, Baillie St., Fort.)

Colombo, Jan. 16th, 1900.

COFFEE :—	
Estate Parchment per bushel	Nil
Chetty do do	Nil
Native Coffee per cwt.	Nil
do F. O. B per cwt.	Nil
Liberian coffee:—per bushel	Nil
do cleaned coffee:—per cwt	Nil
Cocoa unpicked:—per cwt	R40·00 to 44·00
do cleaned do	R43·00 to 48·00
Cardamoms Malabar per lb	R1·00 to 1·10
do Mysore do	R1·65 to 1·90
RICE :—	
Soolai per bag of 164 lb. nett	R8·25 to 8·75
Slate or 1st quality:—per bushel	R3·30 to 3·35
Soolai 2 & 3rd. do do do	R3·20 to 3·30
Coast Calunda	R3·75 to 3·87
Coast Kara	R3·60 to 3·75
Kazala	R3·15 to 3·20
Muttusamba Ordinary	R4·25 to 4·50
Cinnamon. per lb No 1 to 4	R00·58 scarce
do do 1 to 2	Nil
do Chips per candy	R95 00 to 97·50 scarce
Coconuts Ordinary per thousand	R35·00 to 37·00
do Selected do	R36·00 to 38·50
Coconut Oil per cwt	R13·62½ to 13·75
do do F. O. B. per ton	R272·50 to 275·00
POONAC :—	
Gingelly per ton	R97·50 to 100·00
Coconut Chekku do	R75·00 to 77·50
do Mill (retail) do	R77·50 to 80·00
Cotton Seed per ton	R80·00
Copra per candy	
Kalpitiya do	R41·00 to 42·50
Marawila do	R40·00 to 41·50
Cart Copra do	R39 00 to 40·00
Satinwood per cubic feet	R2 00 to 2·25
do Flowered do	R5·00 to 6·00
Halmilla do	R1·90
Palu do	R1·00 to 1·12
Ebony per ton	R75·00 to 175·00
Kitul fibre per cwt	28 00 to R30·00
Palmyra do do	R4·50 to 15·50
Jaffna Black Clean per cwt	R14·50
do mixed do	R12·00 to 13·25
Indian do	R4·50 to 13·50
do Cleaned do	R6·00 to 14·50
Sapanwood per ton	R55·00 to 60·00
Kerosine oil American per case	R7·75 to 8·00
do bulk Russian per tin	R3·20 to 3·30
do Russian per case	R6·75 to 7·00
Nux Vomica per cwt	R2·00 to 3·50
Croton Seed per cwt	R30·00
Kapok cleaned f o b per cwt	R24·50
do uncleaned do	R6·00
Plumbago per ton, according to grade — Large lumps	R700·00 to 1150·00
do	R400·00 to 1125·00
Chips	R200·00 to 800·00
Dust	R100·00 to 600·00

* Latest London Prices.

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce.)

Colombo, 15th Jan. 1900.

CARDAMOMS:—

All round parcel, well bleached per lb R1·70
Do. dull medium do. 1·50
Special assortment, 0 and 1 only do. 2·30
Seeds do. 1·40 Sellers

CINCHONA BARK:—

Per unit of Sulphate of Quinine 11c. 1 o/o to 4 o/o

CINNAMON :—

Ordinary assortment per lb. 59c.
Nos. 1 and 2 only per lb, 65c.
Nos. 3 and 4 only per lb. 51c.—Unchanged

CINNAMON CHIPS :—

Per candy of 560 lb R95—Supply scarce.

COCOA :—

Finest estate red; unpicked per cwt R47·50
Medium do do per cwt R40.
Bright native, unpicked and undried per cwt } None
Ordinary do do do } offering.

COCONUTS—(husked).

Selected per thousand R46·00
Ordinary „ R38·00
Smalls „ R29·00

COCONUT CAKE—

Poonac in robins f. o. b. per ton R77·50
Do. in bags none

COCONUT (Dessicated).

Assorted all grades per lb. 13½c

COCONUT OIL—

Dealers' Oil per cwt. R14·25
Coconut Oil in ordinary packages, f. o. b. per ton R320 00 Large transactions at R320/00

COFFEE—

Plantation Estate Parchment on the spot per bus. R9 50
Plantation Estate Coffee f.o.b. (ready) per cwt. R65
Native Coffee, f.o.b. per cwt none offering

COPRA—

Boat Copra per candy of 560 lb. R43
Calpentyn Copra do do R43·25
Cart do do do R40
Estate do do do R43 25

CROTON SEED per cwt R30

EBONY—

Sound per ton at Govt. depot R175, Inferior R120, As per Govt. sales of 15th November.

FIBRES—

Coconut Bristle	No. 1	per cwt	R11
Do	„ 2	„	8
Coconut mattress	„ 1	„	2·75
Do	„ 2	„	2
Coir Yarn Kogalla	„ 1 to 8		17·25
Do Colombo	„ 1 to 8		16
Kitool all sizes			38
Palmyrah			14

PEPPER—Black per lb 28c.

PLUMBAGO—

Large lumps	„	per ton	R1000
Ordinary lumps	„	„	1050
Chips	„	„	750
Dust	„	„	550
Do (Flying)			200

SAPANWOOD— per ton R57 50

SATINWOOD (ordinary) per cubic ft R2·40

TEA—

	High Grown. cts	Medium. cts	Low Grown. cts
Broken Pekoe per lb	38 to 76	31 to 48	33 to 38
Orange Pekoe do	42 to 63	35 to 47	34 to 37
Pekoe do	36 to 50	32 to 39	32 to 36
Pekoe Souchong do	34 to 42	31 to 37	27 to 31
Pekoe Fannings do	28 to 34	26 to 34	26 to 33
Broken mixed—dust, &c. per lb	25 to 28	24 to 31	23 to 27

CEYLON EXPORTS AND DISTRIBUTION. 1900-1899.

COUNTRIES	Tea. 1900 lbs.	Tea. 1899 lbs.	Coffee—cwt. Plantation	Coffee—cwt. N'tive	Coffee—cwt. Total.	Cocoa cwts.	C'moms lbs.	Cinnamon. Bales lbs.	Cinnamon. Chips. lbs.	Coconut Oil. 1900 cwts.	Coconut Oil. 1899 cwts.	Copra cwts.	Desiccated Coconut lb.	Poonac cwts.	Coconuts. No.	Plumbago. 1900 cwts.	Plumbago. 1899 cwts.	Ebony. cwts.	Sapan-wood cwts.
To U K. ..	1312737	753954	..	..	..	337	..	..	...	...	..	..	..	..	60050	..	98	...	..
„ Austria ..	100	150	..	..	..	..	...	..	..	1616	851	..	..	...	..	..	..	..	240
„ Belgium ...		..	..	..	..	63	...	5000	...	..	..	..	...	...	...	450	..	...	..
„ France ..	12559	..	..	...	..	..	...	500	...	...	...	...	...	...	..	..	...	...	..
„ Germany ..	10395	..	..	..	..	..	8395	11300	22400	905	..	7998	..	1999	10050	3866	..	...	...
„ Holland ..	..	..	..	..	..	..	...	..	..	..	..	..	...	.	...	–	...	...	...
„ Italy ..		..	..	..	..	...	...	8500	...	..	205	...	..	..	...	...	.	...	...
„ Russia ..	..	..	..	..	..	...	..	..	...	..	..	7002	..	...	..	...	..	..	..
„ Spain ..	..	..	..	...	..	..	..	1300	..	..	..	..	...	...	..	..	...	..	..
„ Sweden ..	1900	..	..	..	..	...	..	...	..	...	..	..	...	..	..	...	..	...	...
„ Turkey .	1400	60	..	..	..	..	...	...	..	...	..	..	...	..	..	...	..	...	...
„ India ..	32077	22265	..	..	..	..	645	..	..	..	87	..	..	..	..	..	..	..	..
„ Australia ..	210272	3-4934	204	..	204	..	..	...	...	...	..	..	12000	..	..	..	27	...	..
„ America ..	234916	136326	..	..	..	..	...	..	...	6001	55 3	..	...	...	..	9920	11695	..	...
„ Africa ..	...	..	..	..	..	..	..	..	...	...	..	..	..	...	149260	..	..	..	...
„ China ..	..	85578	..	...	..	...	..	...	...	..	604	..	.	...	..	..		..	...
„ Singapore ..	..	7862	..	..	..	..	..	..	..	...	7839	..	...	..	..	...	..	...	..
„ Mauritius ..	...	.	..	..	..	..	...	...	..	..	..	..	...	..	...	..	...	..	...
„ Malta ..	2102	..	..	...		..	..	...	.	...	...	...	..	..	..	..	..	..	...
Total export from 1st Jan. to 15th Jan. 1900	1837376	1391129	204	..	204	400	9040	26800	22400	8522	15099	15000	12000	1999	209360	14236	11820	..	240

MARKET RATES FOR OLD AND NEW PRODUCTS

(From Lewis & Peat's Fortnightly Prices Current, London, December 13th, 1899.

	QUALITY.	QUOTATIONS.
ALOES, Soccotrine cwt.	Fair to fine dry ..	44s a 100s
Zanzibar & Hepatic ,,	Common to good ..	20s a 60s
BEES' WAX, ,,		
Zanzibar & Bombay White ,,	Good to fine	£6 a £7 10s
Zanzibar & Bombay Yellow ,,	Fair ,,	£5 5s a £6 10s
Madagascar ,,	Dark to good palish	£6 5s a £6 12s 6d
CAMPHOR, China ,,	Fair average quality	160s
Japan ,,	,, ,, ,,	170s
CARDAMOMS, Malabar lb	Clipped, bold, bright, fine	2s 6d a 2s 9d
	Middling, stalky & lean	1s 7d a 2s
Ceylon.—Mysore ,,	Fair to fine plump	3s 5d a 4s 1d
	Seeds .	1s 6d a 2s 6d
,, Tellicherry ,,	Good to fine ..	2s 11d a 3s
	Brownish .	2s 6d
,, Long ,,	Shelly to good ..	2s 6d a 3s 6d
,, Mangalore ,,	Med brown to good bold	2s 3d a 3s 3d
CASTOR OIL, Calcutta ,,	1sts and 2nds ..	3¼d a 4¼d
Madras ,,	..	3½d a 3¾d
CHILLIES, Zanzibar cwt.	Dull to fine bright ...	40s a 47s 6d
CINCHONA BARK.—		
Ceylon lb.	Crown, Renewed	5d a 7d
	Org. Stem	3¾d a 5½d
	Red Org. Stem	2½d a 4¼d
	Renewed	3⅝d
	Root	½d a 3¾d
CINNAMON. Ceylon 1sts per lb.	Ordinary to fine quill	10d a 1s 8d
2nds	,, ,,	9½d a 1s 6d
3rds	,, ,,	8½d a 1s 4d
4ths	,, ,,	8d a 11½d
Chips	,, ,,	2½d a 8d
CLOVES, Penang lb.	Dull to fine bright bold	4d a 9d
Amboyna ..	Dull to fine	4d a 5¼d
Zanzibar and Pemba	Good and fine bright	3⅞d a 4¼d
	Common dull to fair	3 1-16d a 3 5-16d
Stems ..	Fair	1¾d
COCCULUS INDICUS cwt.	Fair	9s
COFFEE		
Ceylon Plantation ,,	Bold to fine bold colory	100s a 115s
	Middling to fine mid .	85s a 95s
	Low mid. and low grown	75s a 82s 6d
	Smalls	55s a 75s
Native	Good ordinary	30s a 70s
Liberian ,,	Small to bold	25s a 35s
COCOA, Ceylon ,,	Bold to fine bold	80s a 90s
	Medium and fair	65s a 77s 6d
	Triage to ordinary	50s a 62s 6d
COLOMBO ROOT ,,	Fair to good	32s 6d a 39s
COIR ROPE, Ceylon ton		nominal
Cochin ,,	Ordinary to fair	£19 a £23
FIBRE, Brush ,,	Ord. to fine long straight	£19 a £21
Cochin ,,	Ordinary to good clean	£18 a £22
Stuffing ,,	Common to fine	£7 a £9
COIR YARN, Ceylon ,,	Common to superior	£15 a £33
Cochin ,,	.. .. very fine	£12 a £32
do. ,,	Roping, fair to good	£10 a £14 10s
CROTON SEEDS, sift. cwt.	Dull to fair	40s a 55s
CUTCH ,, ,,	Fair to fine dry	28s a 42s
GINGER, Bengal, rough ,,	Fair	23s
Calicut, Cut A ,,	Good to fine bold	87s 6d a 92s 6d
B & C ,,	Small and medium	35s a 72s 6d
Cochin Rough ,,	Common to fine bold	24s a 30s
	Small and D's	20s a 25s
Japan ,,	Unsplit	21s 6d
GUM AMMONIACUM ,,	Sm. blocky to fine clean	20s a 45s
ANIMI, Zanzibar ,,	Picked fine pale in sorts	£10 7s 6d a £20
	Part yellow and mixed	£8 2/6 a £10 10s
	Bean and Pea size ditto	70s a £9 7/6
	Amber and dk. red bold	£5 10s a £7 10s
	Med. & bold glassy sorts	80s a 100s
Madagascar ,,	Fair to good palish ..	£4 8s a £8
	.. ,, red ..	£4 5s a £9
ARABIC E. I. & Aden ,,	Ordinary to good pale	40s a 55s
Turkey sorts ,,		67s 6d a 85s
Ghatti ,,	Pickings to fine pale ..	12s 6d a 35s
Kurrachee ,,	Good and fine pale ..	52s 6d a 55s
	Reddish to pale selected	30s a 40s
Madras ,,	Dark to fine pale ..	23s a 35s
ASSAFŒTIDA ,,	Clean fr to gd. almonds	40s a 80s
	Ord. stony and blocky	12s 6d a 35s
KINO ,,	Fine bright	2s a 3s
MYRRH, picked ,,	Fair to fine pale	65s a 75s
Aden sorts ,,	Middling to good	33s a 55s
OLIBANUM, drop ,,	Good to fine white	35s 6d a 50s
	Middling to fair	25s a 35s
pickings ,,	Low to good pale	17s a 20s
siftings ,,	Slightly foul to fino	16s 6d a 18s
INDIARUBBER, Assam lb	Good to fine	2s 10½d a 3s 4d
	Common to foul & mxd.	1s 4d a 2s 6d
Rangoon	Fair to good clean ...	2s 9d a 3s 2d
	Common to fine	1s a 2s 4d

	QUALITY.	QUOTATIONS
INDIARUBBER, *(Contd).*		
Java, Sing. & Penang lb.	Foul to good clean .	8d a 3s 3½d
Mozambique ,,	Good to fine Ball	2s 8d a 3s 7d
	Ordinary to fair Ball.	2s a 2s 10¾d
	Low sandy Ball ..	1s 3d a 1s 7d
	Sausage fair to good	3s 2d a 3s 6d
	Liver and livery Ball	2s 4d a 3s 2½d
Madagascar ,,	Fr to fine pinky & white	3s a 3s 4½d
	Fair to good black	2s a 2s 3d
	Niggers, low to fine .	1s a 2s 6d
INDIGO, E.I. ,,	Bengal--	
	Shipping mid to gd violet	3s 9d a 4s 6d
	Consuming mid. to gd.	3s 6d a 3s 8d
	Ordinary to mid.	3s 2d a 3s 5d
	Mid. to good Kurpah	2s 2d a 2s 8d
	Low to ordinary	1s 11d a 2s 1d
	Mid. to good Madras	1s 5d a 2s 6d
MACE, Bombay & Penang per lb.	Pale reddish to fine	2s a 3s
	Ordinary to fair	1s 5½d a 1s 11d
	Pickings	1s 4d a 1s 4½d
MYRABOLANES, Madras cwt	Dark to fine pale UG	6s a 7s
	Fair Coast	5s 6d a 6s
Bombay ,,	Jubblepore	4s 3d a 7s
	Bbimlies	4s 9d a 9s 6d
	Rhajpore, &c.	4s 3d a 8s
Bengal ,,	Calcutta	4s 6d a 6s
NUTMEGS— lb.	64's to 57's	2s 4d a 2s 6d
Bombay & Penang ,,	110's to 65's	1s a 2s 3d
	160's to 130's	6d a 11d
NUTS, ARECA cwt.	Ordinary to fair fresh	12s a 21s
NUX VOMICA, Bombay per cwt.	Ordinary to middling	4s a 5s 6d
Madras	Fair to good bold fresh	7s a 10s
	Small ordinary and fair	5s 6d
OIL OF ANISEED lb	Fair merchantable	6s 2d
CASSIA ,,	According to analysis	3s 11d a 5s 6d
LEMONGRASS ,,	Good flavour & colour	3¼d
NUTMEG ,,	Dingy to white	3d a 3½d
CINNAMON ,,	Ordinary to fair sweet	3¼d a 1s 6d
CITRONELLE ,,	Bright & good flavour	11d a 1s 1/0½d
ORCHELLA WEED—cwt		
Ceylon ,,	Mid. to fine not woody	10s a 12s 6d
Zanzibar. ,,	Picked clean flat leaf	10s a 16s
	,, wiry Mozambique	10s a 11s
PEPPER (Black) lb.		
Alleppee & Tellicherry	Fair to bold heavy ..	5¾d a 5⅞d
Singapore	Fair	5⅝d
Acheen & W. C. Penang	Dull to fine ...	4⅞d a 5⅜d
PLUMBAGO, lump cwt.	Fair to fine bright bold	64s a 72s
	Middling to good small	25s a 50s
chips ,,	Dull to fine bright ..	23s a 57s 6d
dust ,,	Ordinary to fine bright	12s a 35s
SAFFLOWER ,,	Good to fine pinky .	60s a 65s
	Inferior and pickings	40s a 57s 6d
SANDAL WOOD—		
Bombay, Logs ton.	Fair to fine flavour ..	£20 a £50
Chips ,,	... ...	5s a £8
Madras, Logs ,,	Fair to good flavour ..	£20 a £50
Chips ,,	Inferior to fine ...	£4 a £8
SAPANWOOD Bombay ,,	Lean to good ..	£4 a £5
Madras ,,	Good average .	£4 a £5 nom.
Manila ,,	Rough & rooty to good	£4 10s a £5 15s
Siam ,,	bold smooth ..	£6 a £7
SEEDLAC cwt.	Ord. dusty to gd. soluble	53s a 60s
SENNA, Tinnevelly lb	Good to fine bold green	5d a 8d
	Fair middling medium	4d a 5¼d
	Common dark and small	3d a 3¾d
SHELLS, M. o'PEARL—		
Bombay cwt.	Bold and A's D's and B's Small ...	£4 a £5 5s
Mergui ,,	Small to bold ..	£6 a £8 10s
Mussel ,,	Small to bold ..	£1 a £2 15s
TAMARINDS, Calcutta per cwt.	Mid. to fine bl'k not stony	15s a 16s
Madras	Stony and inferior ..	7s 6d a 11s
TORTOISESHELL—		
Zanzibar & Bombay lb.	Small to bold dark mottle part heavy	15s a 23s 6d
TURMERIC, Bengal cwt.	Fair	26s
Madras ,,	Finger fair to fine bold bright	35s a 42s 6d
Do. ,,	Bulbs ..	17s
Cochin ,,	Finger .	21s
	Bulbs ,,	9s a 12s
VANILLOES— lb.		
Mauritius and Bourbon 1sts	Gd. crysallized 3½ a 9 in	17s 6d a 27s
2nds	Foxy & reddish 4½ a 8 ,,	17s a 24s
Seychelles 3rds	Lean and inferior ...	10s a 15s
VERMILION lb.	Fine, pure, bright ...	2s 8d
WAX, Japan, squares cwt	Good white hard ...	30s 6d a 31s